MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF LITCHFIELD

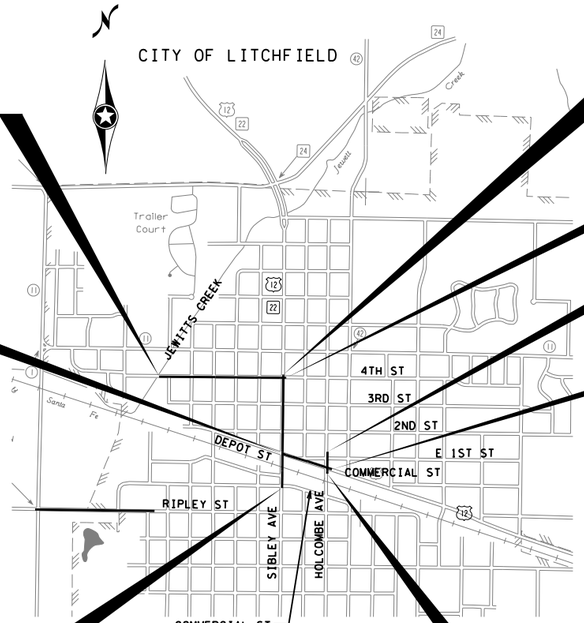
CONSTRUCTION PLAN FOR GRADING, CONCRETE & BITUMINOUS PAVING, ADA IMPROVEMENTS, LIGHTING & SIGNALS

LOCATED ON T.H. 12/22 FROM 4TH STREET TO DEPOT STREET
LOCATED ON T.H. 12 FROM DEPOT STREET TO HOLCOMBE AVE
LOCATED ON T.H. 22 FROM COMMERCIAL STREET TO DEPOT STREET
LOCATED ON 4TH STREET FROM JEWITTS CREEK TO T.H.12/22 (SIBLEY AVE)
LOCATED ON HOLCOMBE AVE FROM DEPOT STREET TO E. 1ST STREET

STATE PROJ. NO. 4704-89 (T.H. 12/22)				STATE PROJ. NO. 4705-47 (T.H. 12)				STATE PROJ. NO. 4709-32 (T.H. 22)			
GROSS LENGTH	1306.22	FEET	0.247 MILES	GROSS LENGTH	855.46	FEET	0.162 MILES	GROSS LENGTH	566.30	FEET	0.107 MILES
BRIDGES-LENGTH		FEET	MILES	BRIDGES-LENGTH		FEET	MILES	BRIDGES-LENGTH		FEET	MILES
EXCEPTIONS-LENGTH		FEET	MILES	EXCEPTIONS-LENGTH		FEET	MILES	EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH	1306.22	FEET	0.247 MILES	NET LENGTH	855.46	FEET	0.162 MILES	NET LENGTH	566.30	FEET	0.107 MILES
REF. POINT	100+00.533 TO REF. POINT 100+00.780			REF. POINT	100+00.780 TO REF. POINT 100+00.942			REF. POINT	142+00.971 TO REF. POINT 143+00.078		

BEGIN S.P. 4704-89 (4TH STREET)
BEGIN S.A.P. 135-010-008 (4TH STREET)
STA 100+16.38

R.P. 100+00.780
STA. 12+87.87 R2
END S.P. 4704-89 (T.H. 12/22)
END S.A.P. 135-010-008 (SIBLEY AVE.)
BEGIN S.A.P 135-010-008 (DEPOT ST.)
BEGIN S.P. 4705-47 (T.H. 12)
STA. 12+80.87
R.P. 143+00.078
STA. 68+85.75
END S.P. 4709-32 (T.H. 22)
END S.A.P. 135-010-009 (SIBLEY AVE.)



BEGIN S.P. 4709-32 (T.H. 22)
BEGIN S.A.P. 135-010-009 (SIBLEY AVE.)
STA. 63+19.45
R.P. 142+00.971

R.P. 100+00.533
STA. 661+51.07 R1
BEGIN S.P. 4704-89 (T.H. 12/22)
BEGIN S.A.P. 135-010-008 (SIBLEY AVE.)

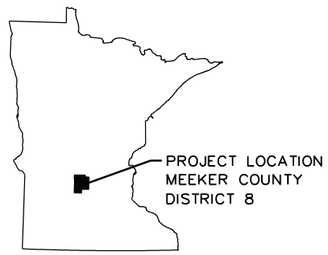
END S.P. 4704-89 (4TH STREET)
END S.A.P 135-010-008 (4TH STREET)
STA 121+12.66

STA. 203+94.95
END S.A.P. 135-117-005
(HOLCOMBE AVE.)

END S.P. 4705-47 (T.H. 12)
END S.A.P. 135-010-008 (DEPOT ST.)
STA. 21+36.33
R.P. 100+00.942

BEGIN S.A.P. 135-117-005
(HOLCOMBE AVE.)
STA. 200+36.97

EQUATIONS
T.H. 12/22 (TH12_NORTH) STA. BK 661+69.42 R1 =
T.H. 12/22 (TH12_NORTH) STA. AH 0+00.00 R2



DESIGN DESIGNATION

		S.P. 4704-89 (TH 12/22)	S.P. 4705-47 (TH 12)	S.P. 4709-32 (TH 22)
DESIGN CESALS	2039 =	6,101,000	6,101,000	6,101,000
ADT (Current Year)	2019 =	9,000	10,000	7,800
ADT (Future Year)	2039 =	9,900	11,000	8,600
DHV (Design Hr. Vol.)	=	975	1050	850
D (Directional Distr.)	=	50/50 %	50/50 %	50/50 %
T (Heavy Commercial)	=	8.3 %	9.0 %	7.1 %

DESIGN SPEED: 30 MPH
BASED ON: STOPPING SIGHT DISTANCE
HEIGHT OF EYE: 3.5' HEIGHT OF OBJECT: 2.0'
DESIGN SPEED NOT ACHIEVED AT:
STOP CONDITIONS: SIGNAL AT STA. 4+80 & STA. 12+80 (T.H. 12/22)

INDEX MAP	0'	2000'
GENERAL LAYOUT	0'	100'
PLAN	0'	25'
PROFILE	0' HORIZ.	25'
	0' VERT.	5'
CROSS-SECTION	0' HORIZ.	10'
	0' VERT.	10'

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO.	CHARGE IDENTIFIER
4704-89	
4705-47	
4709-32	

FED. PROJ. NO. .....

GOVERNING SPECIFICATIONS
THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

SHEET NO. INDEX

SHEET NO.	INDEX
1	TITLE SHEET
2	GENERAL LAYOUT
3-8	STATEMENT OF ESTIMATED QUANTITIES
9	NOTES & STANDARD PLATES
10	EARTHWORK SUMMARY & TABULATION INDEX
11-12	EARTHWORK TABULATION
13-20	QUANTITY TABULATION
21-23	TYPICAL SECTIONS
24-25	MISCELLANEOUS DETAILS
26-29	STRUCTURAL DETAILS
30-52	STANDARD PLANS
53-57	ALIGNMENT PLAN & TABULATION
58-71	EXISTING UTILITY TABULATION
72-79	EXISTING TOPOGRAPHY & UTILITIES PLAN
80-86	REMOVAL PLAN
87-93	CONSTRUCTION PLAN
94-107	CONSTRUCTION PROFILES
108-123	INTERSECTION DETAILS & ADA PLANS
124-130	SUPERELEVATION PLAN
131-134	CONCRETE PAVING PLAN
135-136,136A,137-149	DRAINAGE PLAN & PROFILES
150	GRADING PLAN
151-156	DRAINAGE TABULATION
157-158	SWPPP
159-166	TURF ESTAB. & EROSION CONTROL PLAN
167-175	PAVEMENT MARKING PLAN
176-182,182A,183-188	SIGNING PLAN
189-200	LIGHTING PLAN
201-223	SIGNAL PLAN
224-227	TEMPORARY SIGNAL PLAN
228-239	STAGING & TRAFFIC CONTROL PLAN
M1-M24	WATER & SANITARY SEWER PLAN
XS1-XS35	CROSS SECTIONS

THIS PLAN CONTAINS 300 SHEETS

BOLTON & MENK
12224 NICOLLET AVENUE
BURNSVILLE, MINNESOTA 55337
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Email: Burnsville@bolton-menk.com
www.bolton-menk.com

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: TIM LAMKIN, JR LICENSE # 47099

DATE: 12-27-2018 SIGNATURE: .....

RECOMMENDED FOR APPROVAL ..... 20.....
CITY OF LITCHFIELD CITY ENGINEER

RECOMMENDED FOR APPROVAL ..... 20.....
DISTRICT TRANSPORTATION ENGINEER

RECOMMENDED FOR APPROVAL ..... 20.....
DISTRICT MATERIALS ENGINEER

RECOMMENDED FOR APPROVAL ..... 20.....
DISTRICT WATER RESOURCES ENGINEER

RECOMMENDED FOR APPROVAL ..... 20.....
DISTRICT TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL ..... 20.....
STATE PRE-LETTING ENGINEER

OFFICE OF LAND MANAGEMENT APPROVAL ..... 20.....
DIRECTOR, LAND MANAGEMENT

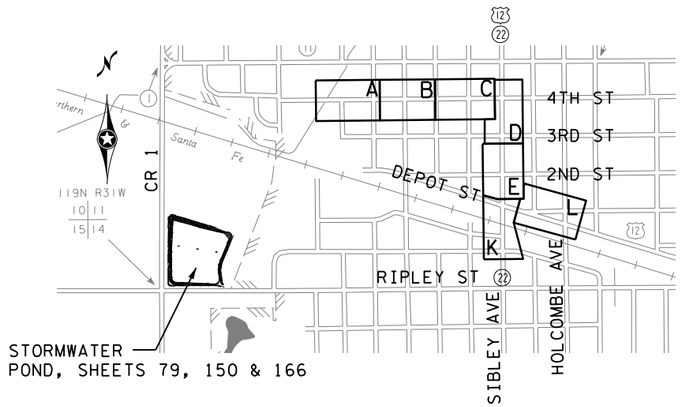
APPROVED ..... 20 .....
STATE DESIGN ENGINEER

..... 20.....
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

..... 20.....
APPROVED FOR STATE AID FUNDING: STATE AID ENGINEER

S.P. 4704-89 (T.H. 12=010), S.P. 4705-47 (T.H. 12=010), S.P. 4709-32 (T.H. 22=022)
S.A.P. 135-010-008, SA.P. 135-010-009, S.A.P. 135-117-005

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℄ HOLCOMBE AVE.
(HOLCOMBE)

STA. 203+94.95
END S.A.P. 135-117-005
(HOLCOMBE AVE.)

BEGIN S.P. 4705-47 (T.H. 12)
BEGIN S.A.P. 135-010-008 (DEPOT ST.)
STA. 12+80.87
END S.A.P. 135-010-009 (SIBLEY AVE.)
END S.P. 4709-32 (T.H. 22)
STA. 68+85.75
END S.P. 4704-89 (T.H. 12/22)
END S.A.P. 135-010-008 (SIBLEY AVE.)
STA. 12+87.87

END S.P. 4704-89 (4TH STREET)
END S.A.P 135-010-008 (4TH STREET)
STA. 121+12.66

HISTORIC
PROPERTY
BOUNDARY

BEGIN S.P. 4704-89 (T.H. 12/22)
BEGIN S.A.P. 135-010-008
(SIBLEY AVE.)
STA. 661+51.07

STA. EQUATION
T.H. 12/22 (TH12_NORTH) BK 661+69.42=
T.H. 12/22 (TH12_NORTH) AH 0+00.00

MATCHLINE STA. 119+75

HISTORIC
DISTRICT
BOUNDARY

TRAFFIC CONTROL
SIGNAL SYSTEM B

℄ T.H. 12/22
(TH12_NORTH)

TRAFFIC CONTROL
SIGNAL SYSTEM A

℄ T.H. 22
(TH22)

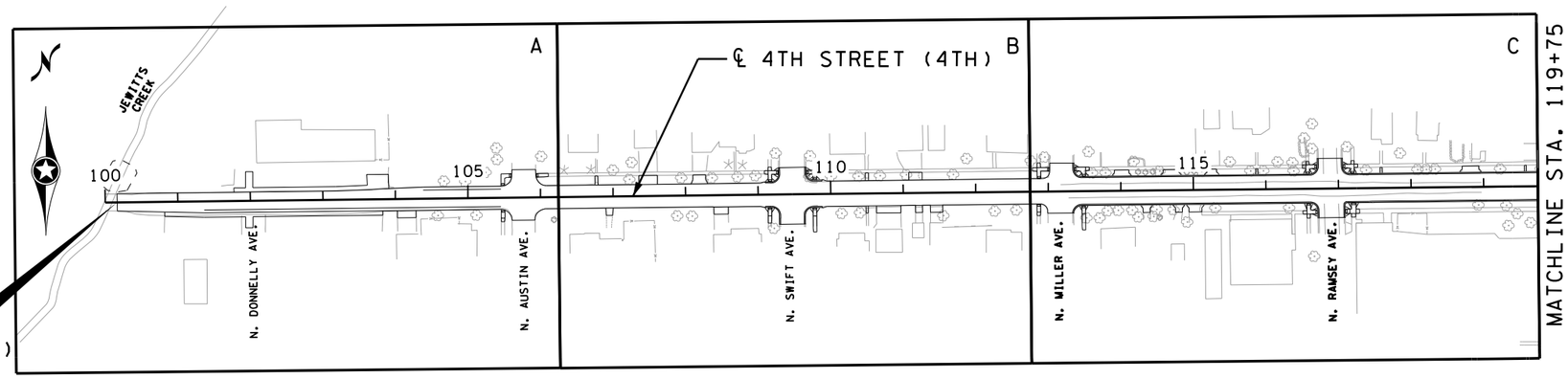
STA. 21+36.33
END S.P. 4705-47 (T.H. 12)
END S.A.P. 135-010-008
(DEPOT ST.)

STA. 200+36.97
BEGIN S.A.P. 135-117-005
(HOLCOMBE AVE.)

HISTORIC
PROPERTY
BOUNDARY

BEGIN S.P. 4709-32(T.H. 22)
BEGIN S.A.P 135-010-009 (SIBLEY AVE.)
STA. 63+19.45

PLAN SHEET LAYOUT							
GENERAL SHEET LAYOUT IDENTIFIER	A	B	C	D	E	K	L
EXISTING TOPO & UTILITIES PLAN	72	73	74	75	76	77	78
REMOVAL PLAN	80	81	82	83	84	85	86
CONSTRUCTION PLAN	87	88	89	90	91	92	93
DRAINAGE PLAN	137	138	139	140	142	144	146 / 148
TURF EST. & EROSION CONTROL PLAN	159	160	161	162	163	164	165
PAVEMENT MARKING PLAN				169	169	170	171



STA. 100+16.38
BEGIN S.P. 4704-89 (4TH STREET)
BEGIN S.A.P. 135-010-008 (4TH STREET)

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SCALE 0 100 200 FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

BOLTON & MENK

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REV.	BY	DATE

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
GENERAL LAYOUT

SHEET 2 OF 239

STATEMENT OF ESTIMATED QUANTITIES (A)

SHEET NO.	TAB	ITEM NO.	ITEM DESCRIPTION	NOTES	UNIT	TOTAL ESTIMATED QUANTITY	S.P. 4704-89 S.A.P. 135-010-008 T.H. 12/22 (C) (E) QUANTITY	S.P. 4704-89 S.A.P. 135-010-008 4TH ST & POND (D) QUANTITY	S.P. 4705-47 S.A.P. 135-010-008 T.H. 12 (C) QUANTITY	S.P. 4709-32 S.A.P. 135-010-009 T.H. 22 (C) QUANTITY	S.A.P. 135-117-005 HOLCOMBE AVE 100% CITY FUNDS QUANTITY	CITY OF LITCHFIELD 100% CITY FUNDS QUANTITY
		2011.601	VIBRATION MONITORING		LUMP SUM	1	1					
		2011.601	AS BUILT		LUMP SUM	1	1					
		2021.501	MOBILIZATION		LUMP SUM	1	0.34	0.35	0.12	0.07	0.02	0.1
		2031.502	FIELD OFFICE TYPE D		EACH	1	0.34	0.35	0.12	0.07	0.02	0.1
		2031.502	FIELD LABORATORY TYPE DX		EACH	1	0.34	0.35	0.12	0.07	0.02	0.1
		2051.501	MAINT AND RESTORATION OF HAUL ROADS		LUMP SUM	1	1					
		2100.614	BUILDING DESIGN A		STRUCTURE	30	30					
		2100.614	BUILDING DESIGN B		STRUCTURE	10	10					
13	B	2101.524	CLEARING		TREE	34	33	1				
13	B	2101.524	GRUBBING		TREE	34	33	1				
168	M	2102.518	PAVEMENT MARKING REMOVAL	(1)	SQ FT	204				204		
14	C	2104.502	REMOVE PIPE APRON		EACH	2		2				
		2104.502	REMOVE LIGHTING UNIT	(2)	EACH	37	22		6	9		
14,M9	C,M-6	2104.502	REMOVE MANHOLE OR CATCH BASIN		EACH	75	17	13	14	13	8	10
M7	M-2	2104.502	REMOVE HYDRANT		EACH	4						4
176	N	2104.502	REMOVE SIGN TYPE C		EACH	46	21	14	6	3	2	
212		2104.502	REMOVE SIGNAL SYSTEM A		EACH	1	1					
221		2104.502	REMOVE SIGNAL SYSTEM B		EACH	1	1					
		2104.502	REMOVE HANDHOLE	(2)	EACH	6	6					
		2104.502	REMOVE LIGHT FOUNDATION	(2)	EACH	37	22		6	9		
176	N	2104.502	SALVAGE SIGN TYPE C		EACH	27	13	4	8		2	
14	C	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	420	96	158	47	86	33	
14	C	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	1494	285	841	91	159	118	
M7	M-2	2104.503	REMOVE WATER MAIN		LIN FT	2628						2628
14	C	2104.503	REMOVE SEWER PIPE (STORM)		LIN FT	5199	1460	1752	1003	621	363	
M9	M-6	2104.503	REMOVE SEWER PIPE (SANITARY)		LIN FT	1857						1857
14	C	2104.503	REMOVE CURB AND GUTTER		LIN FT	6052	2516	1318	1476	224	518	
14	C	2104.504	REMOVE PAVEMENT		SQ YD	1304			1304			
14	C	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ YD	681		161	172	260	88	
14	C	2104.504	REMOVE CONCRETE PAVEMENT		SQ YD	13891	8525		1665	3432	269	
14	C	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		SQ YD	414		414				
14	C	2104.504	REMOVE BITUMINOUS PAVEMENT		SQ YD	12257	700	8199	1936		1422	
14	C	2104.518	REMOVE CONCRETE WALK		SQ FT	45203	30192	2159	4733	7716	403	
		2104.601	HAUL SALVAGED MATERIAL	**(B)** (3)	LUMP SUM	1						

(A) SEE AGREEMENT NO. 1031692 WITH CITY OF LITCHFIELD

(B) 100% STATE FUNDS

(C) 80% FEDERAL/20% STATE FUNDS

(D) 24% FEDERAL/6% STATE/70% CITY FUNDS

(E) SEE LUMP SUM AGREEMENT NO. 1031692 WITH CITY OF LITCHFIELD

(F) S.P. 4704-89 (15.8% FED / 3.9% STATE / 48.3% S.A.P. 135-010-008),
S.P. 4705-47 (10.3% FED / 2.6% STATE / 6.1% S.A.P. 135-010-008),
S.P. 4709-32 (8.1% FED / 2.0% STATE / 2.9% S.A.P. 135-010-009)

(P) DENOTES PLAN QUANTITY

NOTES:

(1) WATER BLASTING METHOD SHALL BE USED TO REMOVE ANY TEMPORARY PAINTED PAVEMENT MARKINGS UNLESS OTHERWISE APPROVED BY THE ENGINEER. COSTS FOR WATERBLASTING ARE INCIDENTAL.

(2) SEE LIGHTING PLANS

(3) HAUL SLAVAGED MATERIALS TO MnDOT DISTRICT 8, 2505 TRANSPORTATION ROAD, WILLMAR, MN 56201

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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REV.	BY	DATE

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
STATEMENT OF ESTIMATED QUANTITIES

STATEMENT OF ESTIMATED QUANTITIES (A)

SHEET NO.	TAB	ITEM NO.	ITEM DESCRIPTION	NOTES	UNIT	TOTAL ESTIMATED QUANTITY	S.P. 4704-89 S.A.P. 135-010-008 T.H. 12/22 (C) (E) QUANTITY	S.P. 4704-89 S.A.P. 135-010-008 4TH ST & POND (D) QUANTITY	S.P. 4705-47 S.A.P. 135-010-008 T.H. 12 (C) QUANTITY	S.P. 4709-32 S.A.P. 135-010-009 T.H. 22 (C) QUANTITY	S.A.P. 135-117-005 HOLCOMBE AVE 100% CITY FUNDS QUANTITY	CITY OF LITCHFIELD 100% CITY FUNDS QUANTITY
M7	M-2	2104.603	ABANDON WATER MAIN	(4)	LIN FT	116						116
		2105.601	DEWATERING	(5)	LUMP SUM	1	1					
10-12	A	2106.507	EXCAVATION - COMMON **(P)**		CU YD	170134	3972	160772	3294	1792	304	
17	F1	2106.507	SELECT GRANULAR EMBANKMENT (CV) **(P)**		CU YD	6209	3164		1871	1174		
10-12	A	2106.507	COMMON EMBANKMENT (CV) **(P)**		CU YD	1064	123	705	150	69	17	
17	F1	2118.507	AGGREGATE SURFACING (CV) CLASS 1		CU YD	82		10	46		26	
		2123.510	COMMON LABORERS	(6)	HOUR	50	50					
		2123.510	10 CU YD TRUCK	(6)	HOUR	50	50					
		2123.510	0.75 CU YD FRONT END LOADER	(6)	HOUR	50	50					
		2123.610	TRACTOR MOUNTED BACKHOE-LOADER	(6)	HOUR	50	50					
		2123.610	CRAWLER MOUNTED BACKHOE	(6)	HOUR	50	50					
		2130.523	WATER	(7)	M GALLON	50	50					
17	F1	2211.507	AGGREGATE BASE (CV) CLASS 3 **(P)**		CU YD	3416	178	2634	8	54	542	
17	F1	2211.507	AGGREGATE BASE (CV) CLASS 5Q **(P)**		CU YD	3738	1938	49	1001	730	20	
121		2232.603	MILLED RUMBLE STRIPS	(8)	LIN FT	40	40					
16	E	2301.502	DOWEL BAR		EACH	9592	4992		2898	1702		
16	E	2301.504	CONCRETE PAVEMENT 8.0" **(P)**		SQ YD	15735	8135		4723	2877		
16	E	2301.508	SUPPLEMENTAL PAVEMENT REINFORCEMENT		POUND	21589	10853		6120	4616		
19	H	2301.602	DRILL AND GROUT REINF BAR (EPOXY COATED)		EACH	436	171	94	31	96	44	
17	F	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (2,C)		TON	2282	95	1793		48	346	
26-29		2433.602	RECONSTRUCT FOUNDATION		EACH	59	59					
151-155	J	2451.507	FINE AGGREGATE BEDDING (CV)		CU YD	4166	1090	2178	720	85	93	
26-29		2451.607	STRUCTURE EXCAVATION (CLASS E)		CU YD	76	76					
151-155	J	2501.502	24" RC PIPE APRON		EACH	2		2				
151-155	J	2501.502	84" RC PIPE APRON		EACH	1		1				
151-155	J	2501.502	73" SPAN RC PIPE-ARCH APRON		EACH	1		1				
151-155	J	2501.602	PIPE TIES		EACH	12		12				
156	K	2502.503	4" PERF TP PIPE DRAIN		LIN FT	5039	2568		1445	1026		

(A) SEE AGREEMENT NO. 1031692 WITH CITY OF LITCHFIELD

(B) 100% STATE FUNDS

(C) 80% FEDERAL/20% STATE FUNDS

(D) 24% FEDERAL/6% STATE/70% CITY FUNDS

(E) SEE LUMP SUM AGREEMENT NO. 1031692 WITH CITY OF LITCHFIELD

(F) S.P. 4704-89 (15.8% FED / 3.9% STATE / 48.3% S.A.P. 135-010-008),
S.P. 4705-47 (10.3% FED / 2.6% STATE / 6.1% S.A.P. 135-010-008),
S.P. 4709-32 (8.1% FED / 2.0% STATE / 2.9% S.A.P. 135-010-009)

(P) DENOTES PLAN QUANTITY

NOTES:

(4) INCLUDES FILLING OF PIPE

(5) GROUNDWATER HAS BEEN IDENTIFIED BETWEEN 10-20 FT THROUGHOUT THE PROJECT. DEWATERING IS ANTICIPATED DURING ALL STORM SEWER AND SANITARY SEWER TRUNK LINE CONSTRUCTION. APPROXIMATE INFILTRATION RATE OF GROUNDWATER IS 0.8 INCHES / HOUR.

(6) USE AS DIRECTED BY AND IN THE PRESENCE OF THE ENGINEER. TO BE USED FOR MISCELLANEOUS DRAINAGE CONNECTIONS.

(7) FOR DUST CONTROL. AS DIRECTED BY THE ENGINEER.

(8) FOR DETECTABLE EDGE OF WALK AT RAILROAD TRACKS. SEE DETAIL ON SHEET 24.

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S.A.P. 135-010-008
S.A.P. 135-010-009
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BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burnsville@bolton-menk.com
www.bolton-menk.com

REV.	BY	DATE

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
STATEMENT OF ESTIMATED QUANTITIES

SHEET 4 OF 239

STATEMENT OF ESTIMATED QUANTITIES (A)

SHEET NO.	TAB	ITEM NO.	ITEM DESCRIPTION	NOTES	UNIT	TOTAL ESTIMATED QUANTITY	S.P. 4704-89 S.A.P. 135-010-008 T.H. 12/22 (C) (E) QUANTITY	S.P. 4704-89 S.A.P. 135-010-008 4TH ST & POND (D) QUANTITY	S.P. 4705-47 S.A.P. 135-010-008 T.H. 12 (C) QUANTITY	S.P. 4709-32 S.A.P. 135-010-009 T.H. 22 (C) QUANTITY	S.A.P. 135-117-005 HOLCOMBE AVE 100% CITY FUNDS QUANTITY	CITY OF LITCHFIELD 100% CITY FUNDS QUANTITY
M9	M-7	2503.503	6" PVC PIPE SEWER		LIN FT	1386						1386
M9	M-5	2503.503	8" PVC PIPE SEWER		LIN FT	1277						1277
M9	M-5	2503.503	10" PVC PIPE SEWER		LIN FT	466						466
151-155	J	2503.503	73" SPAN RC PIPE-ARCH SEWER CLASS IIIA		LIN FT	234		234				
151-155	J	2503.503	102" SPAN RC PIPE-ARCH SEWER CLASS IVA		LIN FT	32		32				
151-155	J	2503.503	12" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	2469	995	278	659	254	283	
151-155	J	2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	615	113	19	188	272	23	
151-155	J	2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	253	82	52	54	34	31	
151-155	J	2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	131		24	48	59		
151-155	J	2503.503	24" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT	66		66				
151-155	J	2503.503	27" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	255			23		232	
151-155	J	2503.503	36" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	31		31				
151-155	J	2503.503	60" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	60			60			
151-155	J	2503.503	66" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	411			411			
151-155	J	2503.503	66" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT	764	400		364			
151-155	J	2503.503	72" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT	832	832					
151-155	J	2503.503	78" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	745		745				
151-155	J	2503.503	78" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT	1088		1088				
151-155	J	2503.503	84" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	196		196				
M9	M-7	2503.602	RECONNECT SANITARY SEWER SERVICE		EACH	9						9
14	C	2503.602	CONSTRUCT BULKHEAD		EACH	2	2					
M9	M-5	2503.602	CONNECT TO EXISTING SANITARY SEWER		EACH	14						14
151-155	J	2503.602	CONNECT TO EXISTING STORM SEWER		EACH	14	1	6	3	4		
M9	M-7	2503.602	CONNECT TO EXISTING SANITARY SEWER SERVICE		EACH	32						32
M9	M-5	2503.602	8"X6" PVC WYE		EACH	37						37
M9	M-5	2503.602	10"X6" PVC WYE		EACH	5						5
151-156	J,K	2503.603	VIDEO TAPE PIPE SEWER		LIN FT	13220	4990	2763	3253	1645	569	
		2504.601	TEMPORARY WATER SERVICE		LUMP SUM	1						1
M7	M-1	2504.602	RECONNECT WATER SERVICE		EACH	10						10
M8	M-4	2504.602	CONNECT TO EXISTING WATER MAIN		EACH	31						31
M7	M-1	2504.602	CONNECT TO EXISTING WATER SERVICE		EACH	38						38
M8	M-4	2504.602	HYDRANT		EACH	4						4
M8	M-4	2504.602	ADJUST GATE VALVE AND BOX		EACH	14						14
M7	M-1	2504.602	1" CORPORATION STOP		EACH	44						44
M7	M-1	2504.602	2" CORPORATION STOP		EACH	4						4
M8	M-4	2504.602	16" BUTTERFLY VALVE AND BOX		EACH	1						1
M8	M-4	2504.602	4" GATE VALVE AND BOX		EACH	2						2
M8	M-4	2504.602	6" GATE VALVE AND BOX		EACH	6						6
M8	M-4	2504.602	8" GATE VALVE AND BOX		EACH	19						19

(A) SEE AGREEMENT NO. 1031692 WITH CITY OF LITCHFIELD

(B) 100% STATE FUNDS

(C) 80% FEDERAL/20% STATE FUNDS

(D) 24% FEDERAL/6% STATE/70% CITY FUNDS

(E) SEE LUMP SUM AGREEMENT NO. 1031692 WITH CITY OF LITCHFIELD

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S.P. 4705-47 (10.3% FED / 2.6% STATE / 6.1% S.A.P. 135-010-008),
S.P. 4709-32 (8.1% FED / 2.0% STATE / 2.9% S.A.P. 135-010-009)

(P) DENOTES PLAN QUANTITY

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T.H. 12/22 RECONSTRUCTION
STATEMENT OF ESTIMATED QUANTITIES

STATEMENT OF ESTIMATED QUANTITIES (A)

SHEET NO.	TAB	ITEM NO.	ITEM DESCRIPTION	NOTES	UNIT	TOTAL ESTIMATED QUANTITY	S.P. 4704-89 S.A.P. 135-010-008 T.H. 12/22 (C) (E) QUANTITY	S.P. 4704-89 S.A.P. 135-010-008 4TH ST & POND (D) QUANTITY	S.P. 4705-47 S.A.P. 135-010-008 T.H. 12 (C) QUANTITY	S.P. 4709-32 S.A.P. 135-010-009 T.H. 22 (C) QUANTITY	S.A.P. 135-117-005 HOLCOMBE AVE 100% CITY FUNDS QUANTITY	CITY OF LITCHFIELD 100% CITY FUNDS QUANTITY
M8	M-4	2504.602	10" GATE VALVE AND BOX		EACH	3						3
M7	M-1	2504.602	1" CURB STOP AND BOX		EACH	44						44
M7	M-1	2504.602	2" CURB STOP AND BOX		EACH	4						4
M7	M-1	2504.603	1" TYPE PE PIPE		LIN FT	1296						1296
M7	M-1	2504.603	2" TYPE PE PIPE		LIN FT	122						122
M8	M-4	2504.603	4" PVC WATERMAIN		LIN FT	72						72
M8	M-4	2504.603	6" PVC WATERMAIN		LIN FT	145						145
M8	M-4	2504.603	8" PVC WATERMAIN		LIN FT	2170						2170
M8	M-4	2504.603	10" PVC WATERMAIN		LIN FT	125						125
M8	M-4	2504.603	12" PVC WATERMAIN		LIN FT	140						140
M8	M-4	2504.603	16" PVC WATERMAIN		LIN FT	23						23
M8	M-4	2504.603	16" STEEL CASING PIPE (JACKED)		LIN FT	167						167
M8	M-4	2504.604	4" POLYSTYRENE INSULATION		SQ YD	176						176
M8	M-3	2504.608	WATERMAIN FITTINGS		POUND	5400						5400
151-155	J	2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN J		EACH	7	4	2	1			
156	L	2506.502	CASTING ASSEMBLY		EACH	115	31	27	27	15	15	
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN F		LIN FT	116.3	64.4	43.5	8.4			
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN G		LIN FT	47.3	13.6	13.4	20.3			
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN H		LIN FT	53.7	12.8	8	28.6	4.3		
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN N		LIN FT	83.4	33.3	8.3		7.6	34.2	
M9	M-5	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 4007		LIN FT	98.4						98.4
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020		LIN FT	247.9	58.5	56.4	43.2	61	28.8	
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020		LIN FT	30.3		8.5	14.9		6.9	
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 84-4020		LIN FT	5.7				5.7		
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 96-4020		LIN FT	13.2			13.2			
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 102-4020		LIN FT	67.6		41	26.6			
151-155	J	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 120-4020		LIN FT	75.8	7	55.7	13.1			
M9	M-5	2506.602	ADJUST FRAME AND RING CASTING		EACH	6						6
M7,M12	M-1	2506.602	CASTING ASSEMBLY SPECIAL		EACH	43						43
20	I	2511.504	GEOTEXTILE FILTER TYPE 4		SQ YD	209		209				
20	I	2511.507	RANDOM RIPRAP CLASS III		CU YD	9		9				
20	I	2511.507	RANDOM RIPRAP CLASS IV		CU YD	118		118				
26-29		2519.507	CLSM LOW DENSITY	(9)	CU YD	76	76					
15	D	2521.518	4" CONCRETE WALK		SQ FT	36103	26463	906	3432	4601	701	
15	D	2521.518	6" CONCRETE WALK		SQ FT	6745	2233	1818	642	1566	486	

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(P) DENOTES PLAN QUANTITY

NOTES:

(9) SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION.

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T.H. 12/22 RECONSTRUCTION
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15	D	2531.503	CONCRETE CURB AND GUTTER DESIGN B424		LIN FT	1160	1127		33			
15	D	2531.503	CONCRETE CURB AND GUTTER DESIGN B618		LIN FT	2050		1526	79		445	
15	D	2531.503	CONCRETE CURB AND GUTTER DESIGN B624		LIN FT	3878	1537		1234	1007	100	
15	D	2531.503	CONCRETE CURB AND GUTTER DESIGN B824		LIN FT	203				203		
15	D	2531.504	CONCRETE MEDIAN	(10)	SQ YD	48				48		
15	D	2531.504	6" CONCRETE DRIVEWAY PAVEMENT		SQ YD	161		155		6		
15	D	2531.504	8" CONCRETE DRIVEWAY PAVEMENT		SQ YD	555		61	198	191	105	
15	D	2531.603	CONCRETE SILL	(10)	LIN FT	2864	2568		230	66		
15	D	2531.603	CONCRETE CURB DESIGN V		LIN FT	141	87		32		22	
		2531.604	8" CONCRETE VALLEY GUTTER	(10)	SQ YD	37			37			
19	H	2531.618	TRUNCATED DOMES		SQ FT	736	284	172	47	160	73	
189	Q	2545.501	LIGHTING SYSTEM	**(F)**	LUMP SUM	1						
200	R	2545.601	TEMPORARY LIGHTING SYSTEM		LUMP SUM	1	1					
		2550.603	REMOVE CONDUIT	(2)	LIN FT	4570	2587		682	1301		
151-155	J	2554.502	GUIDE POST TYPE B		EACH	6		6				
		2563.601	TRAFFIC CONTROL SUPERVISOR		LUMP SUM	1	0.34	0.35	0.12	0.07	0.02	0.1
		2563.601	TRAFFIC CONTROL		LUMP SUM	1	0.34	0.35	0.12	0.07	0.02	0.1
233-235		2563.601	ALTERNATE PEDESTRIAN ROUTE		LUMP SUM	1	1					
229	T	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN		UNIT DAY	51	51					
176	N	2564.502	INSTALL SIGN TYPE C		EACH	27	13	4	8		2	
176	N	2564.518	SIGN PANELS TYPE C		SQ FT	279	62	88	52	58	19	
201	S	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM A		LUMP SUM	1	0.5		0.25	0.25		
201	S	2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM B		LUMP SUM	1						1
201	S	2565.501	TRAFFIC CONTROL INTERCONNECT		LUMP SUM	1	1					
201	S	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM A		SYSTEM	1	0.5		0.25	0.25		
201	S	2565.516	TRAFFIC CONTROL SIGNAL SYSTEM B		SYSTEM	1						1
201	S	2565.616	TEMPORARY SIGNAL SYSTEM		SYSTEM	1	1					
18	G	2572.503	TEMPORARY FENCE	(11)	LIN FT	430		430				
18	G	2572.503	CLEAN ROOT CUTTING	(11)	LIN FT	430		430				
		2573.501	STABILIZED CONSTRUCTION EXIT	(12)	LUMP SUM	1	0.5	0.1	0.1	0.1	0.2	
		2573.501	EROSION CONTROL SUPERVISOR		LUMP SUM	1	0.3	0.4	0.1	0.1		0.1
20	I	2573.502	STORM DRAIN INLET PROTECTION		EACH	81	24	15	19	12	11	
20	I	2573.502	CULVERT END CONTROLS		EACH	1		1				
20	I	2573.503	SILT FENCE, TYPE MS		LIN FT	1691		1691				
20	I	2573.503	FLOTATION SILT CURTAIN TYPE MOVING WATER		LIN FT	33		33				

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(P) DENOTES PLAN QUANTITY

NOTES:

(2) SEE LIGHTING PLANS

(10) SEE DETAIL ON SHEET 24

(11) FOR TREE PROTECTION.

(12) FOR EXITS AT ALL LOCATIONS REQUIRED AS DIRECTED BY THE ENGINEER.

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20	I	2574.505	SUBSOILING		ACRE	13.8	0.1	13.4	0.1	0.2		
20	I	2574.505	SOIL BED PREPARATION	(13)	ACRE	0.9	0.1	0.5	0.1	0.2		
20	I	2574.508	FERTILIZER TYPE 3		POUND	2758	12	2700	5	37	4	
20	I	2575.504	EROSION CONTROL BLANKETS CATEGORY 0		SQ YD	1207		1207				
20	I	2575.504	EROSION CONTROL BLANKETS CATEGORY 3N		SQ YD	3680		3680				
20	I	2575.504	TURF REINFORCEMENT MAT CATEGORY 1		SQ YD	740		740				
20	I	2575.505	SEEDING		ACRE	13.8	0.1	13.4	0.1	0.2		
20	I	2575.505	DISK ANCHORING		ACRE	12.4		12.4				
20	I	2575.505	MOWING		ACRE	27.5	0.2	26.8	0.1	0.4		
20	I	2575.505	WEED SPRAYING		ACRE	13.8	0.1	13.4	0.1	0.2		
20	I	2575.505	RAPID STABILIZATION METHOD 2		ACRE	12.9		12.9				
20	I	2575.506	WEED SPRAY MIXTURE		GALLON	7		6.8	0.1	0.1		
20	I	2575.508	SEED MIXTURE 25-151		POUND	186	13	123	5	41	4	
20	I	2575.508	SEED MIXTURE 33-261		POUND	314		314				
20	I	2575.508	SEED MIXTURE 35-241		POUND	145		145				
20	I	2575.508	HYDRAULIC MULCH MATRIX		POUND	1495	153	768	61	463	50	
20	I	2575.509	MULCH MATERIAL TYPE 3		TON	25		25				
20	I	2575.523	RAPID STABILIZATION METHOD 3		M GALLON	10	0.7	6.6	0.3	2.2	0.2	
229	T	2581.503	REMOVABLE PREFORMED PAVEMENT MARKING TAPE		LIN FT	2680	2680					
229	T	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)		LIN FT	1560	1560					
229	T	2581.618	REMOVABLE PREFORMED PAVEMENT MESSAGE TAPE		SQ FT	31	31					
168	M	2582.503	4" SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	2912	420		1873	619		
168	M	2582.503	6" SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	1797	1797					
168	M	2582.503	8" SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	146			35	111		
168	M	2582.503	12" SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	86			53	33		
168	M	2582.503	24" SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	165	32		76	57		
168	M	2582.503	4" BROKEN LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	190			140	10	40	
168	M	2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT GROUND IN (WR)		LIN FT	1737	1010		448	279		
168	M	2582.518	PAVEMENT MESSAGE MULTI-COMPONENT GROUND IN (WR)		SQ FT	333	90		105	138		
168	M	2582.518	CROSSWALK MULTI-COMPONENT GROUND IN (WR)		SQ FT	3402	1692		468	612	630	
168	M	2582.603	PAVEMENT MARKING SPECIAL		LIN FT	1509	729		102	617	61	
168	M	2582.603	MOBILE RETROREFLECTOMETER MEASUREMENTS		LIN FT	11288	4237		4855	1796	400	

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(P) DENOTES PLAN QUANTITY

NOTES:

(13) USE AT LOCATIONS AS DIRECTED BY THE ENGINEER TO ALLEVIATE EXCESS COMPACTION ON OLD ROAD BEDS & STAGING AREAS.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
STATEMENT OF ESTIMATED QUANTITIES

SHEET 8 OF 239

SOIL AND CONSTRUCTION NOTES

1. MATERIAL STOCKPILES ARE NOT ALLOWED ON THE NEW ROADBED OR ANY ROAD SURFACES WITHOUT THE APPROVAL OF THE ENGINEER.

2. PRIOR TO CONSTRUCTION OR SUBCUTTING, STRIP ALL IN-PLACE TOPSOIL AND SLOPE DRESSING MATERIALS IN AREAS TO BE DISTURBED BY CONSTRUCTION.

3. SLOPE DRESSING EXCAVATION IS INCLUDED IN EXCAVATION - COMMON. EXCAVATION SLOPE DRESSING SHALL BE REUSED AS SLOPE DRESSING EMBANKMENT AS DIRECTED BY THE ENGINEER. SLOPE DRESSING EMBANKMENT IS INCLUDED IN COMMON EMBANKMENT(CV).

4. PROVIDE A FULL DEPTH SAWCUT WHERE PLACING NEW PAVEMENT NEXT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT.

5. IN ANY CASE WHERE GRANULAR EMBANKMENTS OR BACKFILL JOIN NON-GRANULAR SOIL EMBANKMENTS OR BACKFILL, PROVIDE A 1(V):20(H) TRANSITION TAPER BETWEEN THE CHANGES IN MATERIAL TO PREVENT AN ABRUPT SOILS DIFFERENTIAL. THE 1(V):20(H) TAPER SHALL BE CONSTRUCTED SO THAT THE GRANULAR BACKFILL MATERIAL OVERLAYS THE ADJACENT NON-GRANULAR SOIL BACKFILL. SEE CONSTRUCTION PROFILE FOR LOCATIONS.

6. WHERE MATCHING TO INPLACE INTERSECTING ROAD OR STREET, CUT VERTICALLY TO THE BOTTOM OF THE IN-PLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN TAPER AT A 1(V) : 4(H) TO THE BOTTOM OF THE RECOMMENDED SUBGRADE ELEVATION. AT A MINIMUM, THE 1(V): 4(H) TAPER SHALL BEGIN OR END AT A POINT 1-FOOT BEHIND BACK OF CURB OR TO THE SHOULDER PI ON MAINLINE. THE FINAL CUT SHALL NOT BE MADE UNTIL IMMEDIATELY PRIOR TO PAVING TO MAINTAIN A CLEAN STRAIGHT EDGE. SEE CONSTRUCTION PROFILE FOR LOCATIONS.

7. ALL DISTURBED ROADWAY MATERIALS SUCH AS CONCRETE, BITUMINOUS, AND AGGREGATES MAY BE UTILIZED ACCORDING TO MnDOT SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS. MATERIALS NOT UTILIZED ON THIS PROJECT WILL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OFF THE RIGHT OF WAY IN ACCORDANCE WITH MnDOT SPECIFICATION 2104 AND AS AGREED UPON BY ENGINEER.

8. WHERE EXCAVATIONS ARE MADE BELOW THE BOTTOM OF SUBGRADE FOR INSTALLATION OF UTILITIES, BACKFILL WITH LIKE MATERIAL MEETING THE REQUIREMENTS OF SELECT GRADING MATERIAL. ORGANIC SOILS AND MATERIALS CONSIDERED UNSTABLE OR NON-STRUCTURAL GRADING MATERIALS SHALL NOT BE REUSED.

9. THE FOLLOWING COMPACTION TESTING SHALL BE USED:
   A. TEST ROLLING (SPEC 2111) MAY BE USED AT THE DISCRETION OF THE ENGINEER (INCIDENTAL).
   B. NON-STRUCTURAL GRADING MATERIALS: QUALITY COMPACTION METHOD (SPEC 2106)
   C. TRENCHES: SPECIFIED DENSITY. (SPEC 2451)
   D. SELECT GRADING MATERIAL: SPECIFIED DENSITY METHOD (SPEC 2106)
   E. GRANULAR, SELECT GRANULAR, & AGGREGATE BASE MATERIALS: PENETRATION INDEX METHOD. (SPEC 2211)
   F. COMPACT SOILS AROUND STRUCTURES TO 100% MAXIMUM RELATIVE DENISTY. (SPEC 2451)

10. THE CONTRACTOR IS HEREBY REMINDED OF HIS RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.

11. ITEMS MARKED AS "PROTECT" IN THE PLANS SHALL NOT BE DISTURBED THROUGHOUT THE DURATION OF THE PROJECT. IF NECESSARY, CONTRACTOR SHALL PLACE TEMPORARY FENCING, SIGNS, CAUTION TAPE OR OTHER MEANS OF PROTECTION. WORK PERFORMED TO PROTECT ITEMS, OTHER THAN TREES, ARE INCIDENTAL.

12. WATERBLASTING METHODS SHALL BE USED TO REMOVE ANY TEMPORARY PAINTED PAVEMENT MARKINGS UNLESS OTHERWISE AGREED TO BY THE ENGINEER. COSTS FOR WATERBLASTING ARE INCIDENTAL.

13. ANY DEBRIS WHICH MAY BE ENCOUNTERED DURING GRADING SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE PROJECT RIGHT OF WAY. REMOVAL OF NON-HAZARDOUS DEBRIS ARE INCIDENTAL.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTANING TEMPORARY ACCESS DURING CONSTRUCTION FOR ALL PROPERTY OWNERS ADJACENT TO THE PROJECT. COST FOR THIS ARE INCIDENTAL.

15. THE CONTRACTOR SHALL PROVIDE A BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS LIFTS AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING PAVEMENT OR MILLED SURFACES IN ACCORDANCE WITH SPEC 2357. COSTS FOR THIS ARE INCIDENTAL.

16. CONTRACTOR SHALL COMPLY BY ALL REQUIREMENTS IN MnDOT'S RAILROAD AGREEMENT WITH BNSF RAILWAY AND MnDOT SPECIFICATION 1708 WHEN WORKING ACROSS, ABOVE, UNDER, AND ADJACENT TO THE BNSF RAIL.

17. PERPETUATE DRAINAGE ON ALL AREAS DISTURBED BY CONSTRUCTION (INCIDENTAL).

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT

STANDARD PLATES

PLATE NO.	DESCRIPTION
1070M	SUPPLEMENTAL PAVEMENT REINFORCEMENT
1103K	TYPICAL DOWEL BAR ASSEMBLY (2 SHEETS)
1150R	CONCRETE HEADER JOINTS (2 SHEETS)
1210G	CONCRETE PAVEMENT ADJACENT TO RAILWAY CROSSING
3000L	REINFORCED CONCRETE PIPE (5 SHEETS)
3001B	REINFORCED CONCRETE REDUCER PIPE
3006G	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3014J	REINFORCED CONCRETE PIPE ARCH (2 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3133D	RIPRAP AT RCP OUTLETS
4003B	30" PRECAST CATCH BASIN - DESIGN N
4005M	MANHOLE OR CATCH BASIN TYPE A & B CONE SECTIONS PRECAST - DESIGN F
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4007C	PRECAST MECHANICAL JOINT SEWER MANHOLE
4009H	MANHOLE OR CATCH BASIN (SECTIONAL CONCRETE PIPE) - DESIGN J
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4022A	MANHOLE OR CATCH BASIN COVER (3 FT. X 2 FT. OPENING)
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4132G	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 805
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
4180J	MANHOLE OR CATCH BASIN STEP
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7105C	CONCRETE MEDIAN (MOUNTABLE TYPE)
7107I	ENTRANCE NOSE (URBAN DESIGN)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
9000E	APPROACHES AND ENTRANCES - RECOMMENDED STANDARDS

SEE LIGHTING PLAN (SHEET 189) AND SIGNAL PLAN (SHEET 201) FOR ADDITIONAL STANDARD PLATES.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
NOTES & STANDARD PLATES

SHEET 9 OF 239

TABULATION INDEX

TAB	SHEET NO.	TABULATION
A	10-12	EARTHWORK SUMMARY & TABULATION
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C	14	REMOVALS
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E	16	CONCRETE PAVEMENT
F	17	BITUMINOUS SUMMARY
F1	17	AGGREGATE SUMMARY
G	18	TREE PROTECTION
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I	20	TURF ESTABLISHMENT & EROSION CONTROL
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K	156	SUBSURFACE DRAIN
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M-6	M9	SANITARY SEWER REMOVALS
M-7	M9	SANITARY SEWER SERVICES

EARTHWORK SUMMARY — A

ROADWAY	2106 EXCAVATION - COMMON (CU YD)	2106 COMMON EMBANKMENT (CV) (CU YD)
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)		
T.H. 12/22	3972	123
S.P. 4704-89, S.A.P. 135-010-008 SUBTOTAL	**3972**	**123**
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)		
4TH STREET	2717	192
STORM POND (1)	158055	513
S.P. 4704-89, S.A.P. 135-010-008 SUBTOTAL	**160772**	**705**
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)		
T.H. 12	3294	150
S.P. 4705-47, S.A.P. 135-010-008 SUBTOTAL	**3294**	**150**
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)		
T.H. 22	1792	69
S.P. 4709-32, S.A.P. 135-010-009 SUBTOTAL	**1792**	**69**
S.A.P. 135-117-005 (HOLCOMBE AVE) (100% CITY FUNDS)		
HOLCOMBE AVE	304	17
S.A.P. 135-117-005 SUBTOTAL	**304**	**17**
PROJECT TOTALS	**170134**	**1064**

(1) QUANTITY CALCULATED BY SURFACE MODEL COMPARISON

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
EARTHWORK SUMMARY & TABULATION INDEX

SHEET 10 OF 239

EARTHWORK			A
ROADWAY	STATION	2106	
		EXCAVATION - COMMON	COMMON EMBANKMENT (CV)
		CU YD	CU YD
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)			
4TH STREET	100+16.38		
	100+50.00	23	1
	101+00.00	40	3
	101+50.00	49	2
	102+00.00	58	
	102+50.00	61	
	103+00.00	59	
	103+50.00	59	
	104+00.00	51	1
	104+50.00	46	3
	105+00.00	49	3
	105+45.00	46	3
	105+78.00	59	1
	106+10.00	72	6
	106+50.00	75	15
	107+00.00	87	15
	107+50.00	70	9
	108+00.00	51	5
	108+50.00	47	4
	109+00.00	47	8
	109+20.00	18	4
	109+50.00	50	3
	109+75.00	43	2
	110+50.00	75	11
	111+00.00	54	4
	111+50.00	58	4
	112+00.00	65	5
	112+50.00	61	5
	112+88.00	41	6
	113+17.00	68	3
	113+45.00	68	3
	114+00.00	77	10
	114+50.00	83	8
	115+00.00	82	4
	115+50.00	79	1
	116+00.00	74	4
	116+60.00	83	4
	116+90.00	63	
	117+16.00	55	
	117+50.00	43	2

EARTHWORK			A
ROADWAY	STATION	2106	
		EXCAVATION - COMMON	COMMON EMBANKMENT (CV)
		CU YD	CU YD
4TH STREET	118+00.00	62	4
	118+50.00	71	4
	119+00.00	77	4
	119+50.00	81	5
	120+00.00	89	8
	120+25.00	48	5
S.P. 4704-89, S.A.P. 135-010-008 SUBTOTAL		**2717**	**192**
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)			
T.H. 12/22	661+51.07		
	0+35.00	184	
	0+72.00	167	1
	1+00.00	100	3
	1+50.00	174	6
	2+00.00	171	6
	2+50.00	169	6
	3+00.00	166	6
	3+50.00	173	5
	4+00.00	185	6
	4+42.00	156	3
	4+75.00	139	
	5+10.00	135	2
	5+50.00	120	4
	6+00.00	148	5
	6+50.00	147	7
	7+00.00	151	6
	7+50.00	146	6
	8+00.00	140	5
	8+50.00	139	5
	8+82.00	96	2
	9+18.00	147	1
	9+50.00	127	
	10+00.00	137	3
	10+50.00	113	5
	11+00.00	107	8
	11+50.00	118	12
	12+00.00	134	8
	12+30.00	83	2
S.P. 4704-89, S.A.P. 135-010-008 SUBTOTAL		**3972**	**123**

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S.A.P. 135-010-009
S.A.P. 135-117-005

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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
EARTHWORK SUMMARY & TABULATION

SHEET 11 OF 239

EARTHWORK			A	
ROADWAY	STATION	2106		
		EXCAVATION - COMMON	COMMON EMBANKMENT (CV)	
		CU YD	CU YD	
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)				
T.H. 12				
	12+80.87	137	5	(1)
	13+00.00	275	3	
	13+50.00	302	2	
	14+00.00	216	7	
	14+50.00	154	16	
	15+00.00	125	18	
	15+50.00	126	9	
	16+00.00	133	3	
	16+35.00	107	2	
	16+60.00	76	3	
	16+85.00	80	3	
	17+50.00	216	6	
	18+00.00	164	16	
	18+50.00	173	17	
	19+00.00	169	11	
	19+50.00	166	6	
	20+00.00	203	3	
	20+50.00	180	5	
	21+00.00	179	8	
	21+36.34	113	7	
S.P. 4705-47, S.A.P. 135-010-008 SUBTOTAL		**3294**	**150**	
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)				
T.H. 22	63+20.45			
	63+35.00	43	2	
	63+85.00	184	2	
	64+40.00	183	7	
	65+00.00	162	14	
	65+50.00	168	10	
	66+00.00	171	8	
	66+58.56	198	7	
	67+16.27	216	8	
	67+50.00	159	5	
	68+00.00	308	6	
S.P. 4709-32, S.A.P. 135-010-009 SUBTOTAL		**1792**	**69**	

(1) QUANTITY FOR DEPOT ST (THE WESTERN LEG OF TH 12/22) INCLUDED HERE.

EARTHWORK			A
ROADWAY	STATION	2106	
		EXCAVATION - COMMON	COMMON EMBANKMENT (CV)
		CU YD	CU YD
S.A.P. 135-117-005 (HOLCOMBE AVE) (100% CITY FUNDS)			
HOLCOMBE ST.	200+36.97		
	200+75.00	73	4
	201+80.00		
	202+15.00	40	2
	202+50.00	45	1
	202+88.00	45	1
	203+50.00	50	4
	203+94.95	51	5
S.A.P. 135-117-005 SUBTOTAL		**304**	**17**

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DRAWN	TWB
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T.H. 12/22 RECONSTRUCTION
EARTHWORK SUMMARY & TABULATION

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CLEARING AND GRUBBING — B

ROADWAY	STATION	LOCATION	2101 CLEARING TREE	2101 GRUBBING TREE
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)				
T.H. 12/22	1+00	RT	1	1
	1+03	LT	1	1
	1+54	LT	1	1
	2+00	LT	1	1
	2+56	LT	2	2
	2+74	RT	1	1
	3+12	LT	1	1
	3+60	LT	1	1
	4+01	RT	1	1
	4+11	LT	1	1
	5+42	RT	1	1
	5+49	LT	1	1
	5+90	LT	1	1
	6+10	RT	1	1
	6+31	LT	1	1
	6+56	RT	1	1
	6+89	LT	1	1
	7+08	RT	1	1
	7+49	LT	1	1
	7+54	RT	1	1
	7+95	RT	1	1
	7+95	LT	1	1
	8+55	LT	1	1
	9+83	LT	1	1
	10+28	LT	1	1
	10+48	RT	1	1
	10+69	LT	1	1
	10+88	RT	1	1
	11+30	LT	1	1
	11+46	RT	1	1
	11+85	RT	1	1
	12+02	LT	1	1
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008			**33**	**33**
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)				
4TH STREET	109+71	LT	1	1
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008			**1**	**1**
PROJECT TOTALS			**34**	**34**

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QUANTITY TABULATION

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REMOVALS

C

ROADWAY	STATION TO STATION			LOCATION	2104 REMOVE PIPE APRON (EACH)	2104 REMOVE MANHOLE OR CATCH BASIN (EACH)	2104 REMOVE SEWER PIPE (STORM) (LIN FT)	2104 REMOVE CURB AND GUTTER (LIN FT)	2104 REMOVE PAVEMENT (SQ YD)	2104 REMOVE CONCRETE PAVEMENT (SQ YD)	2104 REMOVE BITUMINOUS PAVEMENT (SQ YD)	2104 REMOVE CONCRETE WALK (SQ FT)	2104 REMOVE CONCRETE DRIVEWAY PAVEMENT (SQ YD)	2104 REMOVE BITUMINOUS DRIVEWAY PAVEMENT (SQ YD)	2104 SAWING BITUMINOUS PAVEMENT (FULL DEPTH) (LIN FT)	2104 SAWING CONCRETE PAVEMENT (FULL DEPTH) (LIN FT)	2503 CONSTRUCT BULKHEAD (EACH)
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)																	
T.H. 12/22	661+51	TO	5+60	LT		1		581			103	6832			46	40	
	661+51	TO	5+60	RT		2		586			146	6460			96		1
	661+51	TO	5+60	RT/LT		2	621			3899						56	
	5+60	TO	12+10	LT		4		660			78	8078			46		
	5+60	TO	12+10	RT		1		635			28	7725			45		
	5+60	TO	12+10	RT/LT		4	621			4127							
	12+10	TO	12+88	LT		1		54				558					
	12+10	TO	12+88	RT		1					345	539			52		1
	12+10	TO	12+88	RT/LT		1	218			499							
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008						**17**	**1460**	**2516**		**8525**	**700**	**30192**			**285**	**96**	**2**
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)																	
4TH STREET	100+16	TO	106+25	LT		1						74		127	246		
	100+16	TO	106+25	RT		4						23		201	332		
	100+16	TO	106+25	RT/LT		2	1261				2178						
	106+25	TO	112+75	LT		1						375		35	60		
	106+25	TO	112+75	RT		2						272	75		33	81	
	106+25	TO	112+75	RT/LT		1	451				2617						
	112+75	TO	119+75	LT				628				773	86		64	77	
	112+75	TO	119+75	RT				598				620		51	106		
	112+75	TO	119+75	RT/LT							3213						
	119+75	TO	121+13	LT		1		46				22					
	119+75	TO	121+13	RT		1		46									
	119+75	TO	121+13	RT/LT			40				191						
RIPLEY STREET	300+00	TO	310+00	RT/LT	2												
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					**2**	**13**	**1752**	**1318**			**8199**	**2159**	**161**	**414**	**841**	**158**	
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)																	
T.H. 12	12+80	TO	14+50	LT				143				1873					
	12+80	TO	14+50	RT		1		88				215					
	12+80	TO	14+50	RT/LT		1	88			1047							
	14+50	TO	21+37	LT		5		649			1111	2501	64		91		
	14+50	TO	21+37	RT		4		596			825	144	108				
	14+50	TO	21+37	RT/LT		3	915		1304	618						47	
SUBTOTAL S.P. 4705-47, S.A.P. 135-010-008						**14**	**1003**	**1476**	**1304**	**1665**	**1936**	**4733**	**172**		**91**	**47**	
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)																	
T.H. 22	63+19	TO	68+86	LT		6		123				3066	81			42	
	63+19	TO	68+86	RT		2						4130	179		159		
	63+19	TO	68+86	RT/LT		5	621	101		3432		520				44	
SUBTOTAL S.P. 4709-32, S.A.P. 135-010-009						**13**	**621**	**224**		**3432**		**7716**	**260**		**159**	**86**	
S.A.P. 135-117-005 (HOLCOMBE AVE) (100% CITY FUNDS)																	
HOLCOMBE AVE	200+36	TO	203+95	LT		2		251				169	88		39		
	200+36	TO	203+95	RT		3		267			107	234			38		
	200+36	TO	203+95	RT/LT		3	363			269	1315				41	33	
SUBTOTAL S.A.P. 135-117-005						**8**	**363**	**518**		**269**	**1422**	**403**	**88**		**118**	**33**	
PROJECT TOTALS					**2**	**65**	**5199**	**6052**	**1304**	**13891**	**12257**	**45203**	**681**	**414**	**1494**	**420**	**2**

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
QUANTITY TABULATION

SHEET 14 OF 239

CONCRETE SUMMARY

D

ROADWAY	STATION TO STATION			LOCATION	2521 4" CONCRETE WALK SQ FT	2521 6" CONCRETE WALK SQ FT	2531 CONCRETE CURB AND GUTTER DESIGN B424 LIN FT	2531 CONCRETE CURB AND GUTTER DESIGN B618 LIN FT	2531 CONCRETE CURB AND GUTTER DESIGN B624 LIN FT	2531 CONCRETE CURB AND GUTTER DESIGN B824 LIN FT	2531 CONCRETE MEDIAN SQ YD	2531 6" CONCRETE DRIVEWAY PAVEMENT SQ YD	2531 8" CONCRETE DRIVEWAY PAVEMENT SQ YD	2531 CONCRETE SILL LIN FT	2531 CONCRETE CURB DESIGN V LIN FT
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)															
T.H. 12/22	661+51	TO	5+60	LT	6042	762	96		491					538	
	661+51	TO	5+60	RT	5974	639	127		512					592	14
	661+51	TO	5+60	RT/LT											
	5+60	TO	12+10	LT	7335	276	359		303					662	30
	5+60	TO	12+10	RT	6543	264	429		206					635	17
	5+60	TO	12+10	RT/LT											
	12+10	TO	12+88	LT	397		55							55	26
	12+10	TO	12+88	RT	172	292	61		25					86	
	12+10	TO	12+88	RT/LT											
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					**26463**	**2233**	**1127**		**1537**					**2568**	**87**
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)															
4TH STREET	100+16	TO	106+25	LT		217									
	100+16	TO	106+25	RT	24	58						29			
	100+16	TO	106+25	RT/LT											
	106+25	TO	112+75	LT	190	309		66							
	106+25	TO	112+75	RT	187	157		78				90			
	106+25	TO	112+75	RT/LT											
	112+75	TO	119+75	LT	241	593		653				36	39		
	112+75	TO	119+75	RT	245	484		645					22		
	112+75	TO	119+75	RT/LT											
	119+75	TO	121+13	LT	19			42							
	119+75	TO	121+13	RT				42							
	119+75	TO	121+13	RT/LT											
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					**906**	**1818**		**1526**				**155**	**61**		
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)															
T.H. 12	12+80	TO	14+50	LT	1537	298	33		110					110	32
	12+80	TO	14+50	RT					87						
	12+80	TO	14+50	RT/LT											
	14+50	TO	21+37	LT	1895	223		79	407				59	120	
	14+50	TO	21+37	RT		121			630				139		
	14+50	TO	21+37	RT/LT											
SUBTOTAL S.P. 4705-47, S.A.P. 135-010-008					**3432**	**642**	**33**	**79**	**1234**				**198**	**230**	**32**
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)															
T.H. 22	63+19	TO	68+86	LT	2241	606			487			6	133		
	63+19	TO	68+86	RT	1584	715			520				58	66	
	63+19	TO	68+86	RT/LT	776	245				203	48				
SUBTOTAL S.P. 4709-32, S.A.P. 135-010-009					**4601**	**1566**			**1007**	**203**	**48**	**6**	**191**	**66**	
S.A.P. 135-117-005 (HOLCOMBE AVE) (100% CITY FUNDS)															
HOLCOMBE AVE	200+36	TO	203+95	LT	64	170		196	68				105		22
	200+36	TO	203+95	RT	637	316		249	32						
	200+36	TO	203+95	RT/LT											
SUBTOTAL S.A.P. 135-117-005					**701**	**486**		**445**	**100**				**105**		**22**
PROJECT TOTALS					**36103**	**6745**	**1160**	**2050**	**3878**	**203**	**48**	**161**	**555**	**2864**	**141**

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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T.H. 12/22 RECONSTRUCTION
QUANTITY TABULATION

SHEET 15 OF 239

CONCRETE PAVEMENT

E

ROADWAY	STATION TO STATION			LOCATION	2301 DOWEL BAR EACH	2301 CONCRETE PAVEMENT 8" SQ YD	2301 SUPPLEMENTAL PAVEMENT REINFORCEMENT POUND
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)							
T.H. 12/22	661+51	TO	5+60	RT/LT	2184	3562	4573
	5+60	TO	12+10	RT/LT	2340	3816	4376
	12+10	TO	12+88	RT/LT	468	757	1904
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					**4992**	**8135**	**10853**
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)							
T.H. 12	12+80	TO	14+50	RT/LT	690	974	1200
	14+50	TO	21+37	RT/LT	2208	3749	4920
SUBTOTAL S.P. 4705-47, S.A.P. 135-010-008					**2898**	**4723**	**6120**
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)							
T.H. 22	63+19	TO	68+86	RT/LT	1702	2877	4616
SUBTOTAL S.P. 4709-32, S.A.P. 135-010-009					**1702**	**2877**	**4616**
PROJECT TOTALS					**9592**	**15735**	**21589**

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T.H. 12/22 RECONSTRUCTION
QUANTITY TABULATION

BITUMINOUS SUMMARY

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ROADWAY	STATION TO STATION			LOCATION	2360 TYPE SP 12.5 WEARING COURSE MIXTURE (2,C) TON (1)
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)					
T.H. 12/22	661+51	TO	5+60	LT	23
	661+51	TO	5+60	RT	42
	661+51	TO	5+60	RT/LT	
	5+60	TO	12+10	LT	21
	5+60	TO	12+10	RT	9
	5+60	TO	12+10	RT/LT	
	12+10	TO	12+88	LT	
	12+10	TO	12+88	RT	
	12+10	TO	12+88	RT/LT	
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					**95**
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)					
4TH STREET	100+16	TO	106+25	LT	30
	100+16	TO	106+25	RT	43
	100+16	TO	106+25	RT/LT	449
	106+25	TO	112+75	LT	13
	106+25	TO	112+75	RT	
	106+25	TO	112+75	RT/LT	546
	112+75	TO	119+75	LT	13
	112+75	TO	119+75	RT	9
	112+75	TO	119+75	RT/LT	651
	119+75	TO	121+13	LT	
	119+75	TO	121+13	RT	
	119+75	TO	121+13	RT/LT	39
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					**1793**
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)					
T.H. 12	12+80	TO	14+50	LT	
	12+80	TO	14+50	RT	
	12+80	TO	14+50	RT/LT	
	14+50	TO	21+37	LT	
	14+50	TO	21+37	RT	
	14+50	TO	21+37	RT/LT	
SUBTOTAL S.P. 4705-47, S.A.P. 135-010-008					
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)					
T.H. 22	63+19	TO	68+86	LT	26
	63+19	TO	68+86	RT	22
	63+19	TO	68+86	RT/LT	
SUBTOTAL S.P. 4709-32, S.A.P. 135-010-009					**48**
S.A.P. 135-117-005 (HOLCOMBE AVE) (100% CITY FUNDS)					
HOLCOMBE AVE	200+36	TO	203+95	LT	
	200+36	TO	203+95	RT	18
	200+36	TO	203+95	RT/LT	328
SUBTOTAL S.A.P. 135-117-005					**346**
PROJECT TOTALS					**2282**

NOTES:
(1) CALCULATED AT 120 LBS/SQ YD-IN

AGGREGATE SUMMARY

F1

ROADWAY	STATION TO STATION			LOCATION	2106 SELECT GRANULAR EMBANKMENT (CV) CU YD	2118 AGGREGATE SURFACING (CV) CLASS 1 CU YD	2211 AGGREGATE BASE (CV) CLASS 3 CU YD	2211 AGGREGATE BASE (CV) CLASS 5Q CU YD
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)								
T.H. 12/22	661+51	TO	5+60	RT/LT	1390		118	861
	5+60	TO	12+10	RT/LT	1493		60	925
	12+10	TO	12+88	RT/LT	281			152
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					**3164**		**178**	**1938**
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)								
4TH STREET	100+16	TO	106+25	RT/LT		10	675	6
	106+25	TO	112+75	RT/LT			824	17
	112+75	TO	119+75	RT/LT			1067	25
	119+75	TO	121+13	RT/LT			68	1
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008						**10**	**2634**	**49**
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)								
T.H. 12	12+80	TO	14+50	RT/LT	365			206
	14+50	TO	21+37	RT/LT	1506	46	8	795
SUBTOTAL S.P. 4705-47, S.A.P. 135-010-008					**1871**	**46**	**8**	**1001**
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)								
T.H. 22	63+19	TO	68+86	RT/LT	1174		54	730
SUBTOTAL S.P. 4709-32, S.A.P. 135-010-009					**1174**		**54**	**730**
S.A.P. 135-117-005 (HOLCOMBE AVE) (100% CITY FUNDS)								
HOLCOMBE AVE	200+36	TO	203+95	RT/LT		26	542	20
SUBTOTAL S.A.P. 135-117-005						**26**	**542**	**20**
PROJECT TOTALS					**6209**	**82**	**3416**	**3738**

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T.H. 12/22 RECONSTRUCTION
QUANTITY TABULATION

SHEET 17 OF 239

TREE PROTECTION				G
ROADWAY	STATION	LOCATION	2572 TEMPORARY FENCE	2572 CLEAN ROOT CUTTING
			LIN FT	LIN FT
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)				
4TH STREET	104+59	RT	10	10
	104+68	LT	10	10
	104+97	LT	10	10
	105+12	RT	10	10
	107+23	LT	10	10
	107+89	RT	10	10
	107+95	LT	10	10
	108+09	RT	10	10
	108+37	LT	10	10
	108+72	LT	10	10
	108+97	LT	10	10
	110+01	LT	10	10
	110+15	RT	10	10
	110+39	LT	10	10
	110+41	RT	10	10
	110+69	LT	10	10
	111+05	LT	10	10
	111+55	RT	10	10
	111+69	LT	10	10
	112+26	RT	10	10
	112+56	RT	10	10
	113+61	LT	10	10
	113+79	LT	10	10
	113+82	RT	10	10
	113+96	RT	10	10
	114+16	RT	10	10
	114+49	RT	10	10
	114+54	LT	10	10
	114+73	RT	10	10
	115+12	LT	10	10
	115+31	RT	10	10
	115+79	LT	10	10
	115+97	LT	10	10

TREE PROTECTION				G
ROADWAY	STATION	LOCATION	2572 TEMPORARY FENCE	2572 CLEAN ROOT CUTTING
			LIN FT	LIN FT
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)				
4TH STREET	116+32	RT	10	10
	116+39	LT	10	10
	117+39	LT	10	10
	118+09	LT	10	10
	118+22	LT	10	10
	118+34	LT	10	10
	118+93	RT	10	10
	119+23	LT	10	10
	119+32	RT	10	10
	119+80	LT	10	10
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008			**430**	**430**
PROJECT TOTALS			**430**	**430**

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S.A.P. 135-010-008
S.A.P. 135-010-009
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QUANTITY TABULATION

SHEET 18 OF 239

PEDESTRIAN RAMPS

H

ROADWAY	CORNER LOCATION	2531 TRUNCATED DOMES MAIN STREET SQ FT	2531 TRUNCATED DOMES SIDE STREET SQ FT	2301 DRILL & GROUNT REINF BAR (EPOXY COATED) EACH	CURB RAMP DESIGN (1)(2)	CURB RADIUS (FT) (3)
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)						
SIBLEY AVE / 4TH ST	NW	7	7	8	COMBINED DIRECTIONAL	
SIBLEY AVE / 4TH ST	NE	7	7	10	COMBINED DIRECTIONAL	
SIBLEY AVE / 4TH ST	SE	9	9	14	COMBINED DIRECTIONAL	
SIBLEY AVE / 4TH ST	SW	9	9	12	COMBINED DIRECTIONAL	
SIBLEY AVE / 3RD ST	NW	9	9	16	FAN	20
SIBLEY AVE / 3RD ST	NE	9	9	16	FAN	20
SIBLEY AVE / 3RD ST	SE	9	9	15	FAN	20
SIBLEY AVE / 3RD ST	SW	9	9	14	FAN	20
SIBLEY AVE / 2ND ST	NW	35		12	FAN	10
SIBLEY AVE / 2ND ST	NE	35		12	FAN	10
SIBLEY AVE / 2ND ST	SE	9	9	12	COMBINED DIRECTIONAL	
SIBLEY AVE / 2ND ST	SW	9	9	12	COMBINED DIRECTIONAL	
SIBLEY AVE / T.H. 12	NW	35		11	FAN	24
SIBLEY AVE / T.H. 12	NE	7		7	COMBINED DIRECTIONAL	
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008		**284**		**171**		
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)						
4TH ST / N AUSTIN AVE	NW	7	7	4	COMBINED DIRECTIONAL	
4TH ST / N AUSTIN AVE	NE		7	4	COMBINED DIRECTIONAL	
4TH ST / N AUSTIN AVE	SW	7		4	COMBINED DIRECTIONAL	
4TH ST / N SWIFT AVE	NW	7	7	8	COMBINED DIRECTIONAL	
4TH ST / N SWIFT AVE	NE	7	7	8	COMBINED DIRECTIONAL	
4TH ST / N SWIFT AVE	SE	7		4	COMBINED DIRECTIONAL	
4TH ST / N SWIFT AVE	SW	7		4	COMBINED DIRECTIONAL	
4TH ST / N MILLER AVE	NW	7	7	8	COMBINED DIRECTIONAL	
4TH ST / N MILLER AVE	NE	7	7	6	COMBINED DIRECTIONAL	
4TH ST / N MILLER AVE	SE	7		4	COMBINED DIRECTIONAL	
4TH ST / N MILLER AVE	SW	7		4	COMBINED DIRECTIONAL	
4TH ST / N RAMSEY AVE	NW	7	7	8	COMBINED DIRECTIONAL	
4TH ST / N RAMSEY AVE	NE	7	7	8	COMBINED DIRECTIONAL	
4TH ST / N RAMSEY AVE	SE	9	9	12	COMBINED DIRECTIONAL	
4TH ST / N RAMSEY AVE	SW	7	7	8	COMBINED DIRECTIONAL	
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008		**172**		**94**		
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)						
DEPOT ST. / SIBLEY AVE	NE	9		11	COMBINED DIRECTIONAL	
DEPOT ST / HOLCOMBE AVE	NW	11		5	FAN	15
DEPOT ST / HOLCOMBE AVE	NE	9	9	9	COMBINED DIRECTIONAL	
DEPOT ST / HOLCOMBE AVE	SE	9		6	COMBINED DIRECTIONAL	
SUBTOTAL S.P. 4705-47, S.A.P. 135-010-008		**47**		**31**		

PEDESTRIAN RAMPS

H

ROADWAY	CORNER LOCATION	2531 TRUNCATED DOMES MAIN STREET SQ FT	2531 TRUNCATED DOMES SIDE STREET SQ FT	2301 DRILL & GROUNT REINF BAR (EPOXY COATED) EACH	CURB RAMP DESIGN (1)(2)	CURB RADIUS (FT) (3)
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)						
DEPOT ST. / SIBLEY AVE	ISLAND	9	9	14	COMBINED DIRECTIONAL	
DEPOT ST. / SIBLEY AVE	ISLAND	9		4	COMBINED DIRECTIONAL	
DEPOT ST. / SIBLEY AVE	SE	9		6	COMBINED DIRECTIONAL	
DEPOT ST. / SIBLEY AVE	SW	9	9	18	COMBINED DIRECTIONAL	
SIBLEY AVE/RAILROAD	NW	9		6	DIRECTIONAL	
SIBLEY AVE/RAILROAD	NE	9		6	DIRECTIONAL	
SIBLEY AVE/RAILROAD	SE	9		6	DIRECTIONAL	
SIBLEY AVE/RAILROAD	SW	9		6	DIRECTIONAL	
SIBLEY AVE / COMMERCIAL ST	NW	9		6	PERPENDICULAR	
SIBLEY AVE / COMMERCIAL ST	NE	9	25	10	COMB/PERP	55
SIBLEY AVE / COMMERCIAL ST	SE	9	9	8	COMBINED DIRECTIONAL	
SIBLEY AVE / COMMERCIAL ST	SW	9		6	PERPENDICULAR	
SUBTOTAL S.P. 4709-32, S.A.P. 135-010-009		**160**		**96**		
S.A.P. 135-117-005 (HOLCOMBE AVE) (100% CITY FUNDS)						
HOLCOMBE AVE / 1ST ST	NW	9	9	12	COMBINED DIRECTIONAL	
HOLCOMBE AVE / 1ST ST	NE	9	9	16	COMBINED DIRECTIONAL	
HOLCOMBE AVE / 1ST ST	SE	9	9	9		
HOLCOMBE AVE / 1ST ST	SW	19		7	FAN	10
SUBTOTAL S.A.P. 135-117-005		**73**		**44**		
PROJECT TOTALS		**736**		**436**		

NOTES:

(1) SEE PEDESTRIAN CURB RAMP STANDARD PLANS FOR CONSTRUCTION DETAILS

(2) FOR CUSTOM DESIGN SEE INTERSECTION DETAIL SHEETS

(3) CURB RADIUS MEASURED AT BACK OF CURB

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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REV.	BY	DATE

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
QUANTITY TABULATION

SHEET 19 OF 239

TURF ESTABLISHMENT & EROSION CONTROL (1)

I

ROADWAY	STATION TO STATION			LOCATION	2511 GEOTEXTILE FILTER TYPE 4 SQ YD	2511 RANDOM RIPRAP CL III CU YD	2511 RANDOM RIPRAP CL IV CU YD	2573 STORM DRAIN INLET PROTECTION (7) EACH	2573 CULVERT END CONTROLS (7) EACH	2573 SILT FENCE, TYPE MS (7) LIN FT	2573 FLOATING SILT CURTAIN TYPE MOVING WATER (6) (7) LIN FT	2574 SUBSOILING ACRE	2574 SOIL BED PREPARATION ACRE	2574 FERTILIZER TYPE 3 (2) POUND	2575 EROSION CONTROL BLANKET CATEGORY 0 SQ YD	2575 EROSION CONTROL BLANKET CATEGORY 3N (8) SQ YD	2575 TURF REINFORCEMENT MAT CATEGORY 1 SQ YD	2575 SEEDING ACRE	2575 DISK ANCHORING ACRE	2575 MOWING (5) ACRE	2575 WEED SPRAYING (4) ACRE	2575 RAPID STABILIZATION METHOD 2 ACRE	2575 WEED SPRAY MIXTURE (3) GALLON	2575 SEED MIXTURE 25-151 POUND	2575 SEED MIXTURE 33-261 POUND	2575 SEED MIXTURE 35-241 POUND	2575 HYDRAULIC MULCH MATRIX POUND	2575 MULCH MATERIAL TYPE 3 TON	2575 RAPID STABILIZATION METHOD 3 MGAL
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)																													
4TH ST	100+16.38	TO	106+25	RT/LT	176		118	5		113	33	0.1	0.1	29	295	295		0.1		0.2	0.1		0.1	32			206		1.7
	106+25	TO	112+75	RT/LT				4				0.2	0.2	35	858	858		0.2		0.4	0.2		0.1	39					2.1
	112+75	TO	119+75	RT/LT				2				0.2	0.2	42	54	54		0.2		0.4	0.2		0.1	47			503		2.5
	119+75	TO	121+12.66	RT/LT				4						5										5			59		0.3
POND					33	9			1	1578		12.9		2589		2473	740	12.9	12.4	25.8	12.9	12.9	6.5		314	145		25	
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					**209**	**9**	**118**	**15**	**1**	**1691**	**33**	**13.4**	**0.5**	**2700**	**1207**	**3680**	**740**	**13.4**	**12.4**	**26.8**	**13.4**	**12.9**	**6.8**	**123**	**314**	**145**	**768**	**25**	**6.6**
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)																													
TH 12/22	661+51.99	TO	5+60	RT/LT				12				0.1	0.1	12				0.1		0.2	0.1			13			153		0.7
	5+60	TO	12+10	RT/LT				10																					
	12+10	TO	12+79.23	RT/LT				2																					
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008								**24**				**0.1**	**0.1**	**12**				**0.1**		**0.2**	**0.1**			**13**			**153**		**0.7**
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)																													
TH 22	63+19.45	TO	68+94.39	RT/LT				12				0.2	0.2	37				0.2		0.4	0.2		0.1	41			463		2.2
SUBTOTAL S.P. 4709-32, S.A.P. 135-010-009								**12**				**0.2**	**0.2**	**37**				**0.2**		**0.4**	**0.2**		**0.1**	**41**			**463**		**2.2**
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)																													
TH 12	12+03.03	TO	14+50	RT/LT								0.1	0.1	5				0.1		0.1	0.1		0.1	5			61		0.3
	14+50	TO	21+36.33	RT/LT				19																					
SUBTOTAL S.P. 4705-47, S.A.P. 135-010-008								**19**				**0.1**	**0.1**	**5**				**0.1**		**0.1**	**0.1**		**0.1**	**5**			**61**		**0.3**
S.A.P. 135-117-005 (HOLCOMBE AVE) (100% CITY FUNDS)																													
HOLCOMBE AVE	200+36.97	TO	203+94.95	RT/LT				11						4										4			50		0.2
SUBTOTALS S.A.P. 135-117-005								**11**						**4**										**4**			**50**		**0.2**
TOTALS					**209**	**9**	**118**	**81**	**1**	**1691**	**33**	**13.8**	**0.9**	**2758**	**1207**	**3680**	**740**	**13.8**	**12.4**	**27.5**	**13.8**	**12.9**	**7.0**	**186**	**314**	**145**	**1495**	**25**	**10.0**

NOTES:

(1) SEEDING WILL BE PAID ONCE. CONTRACTOR IS RESPONSIBLE FOR ADDITIONAL SEEDING APPLICATIONS NEEDED TO MEET FINAL STABILIZATION REQUIREMENTS.

(2) USE FERTILIZER TYPE 3 ANALYSIS 22-5-10 @ 200 LB/ACRE

(3) WEED SPRAY MIXTURE QUANTITY BASED ON 0.5 GAL/ACRE. MIXTURE SHALL BE 2, 4-D AMINE LABELED FOR BOTH AQUATIC AND R/W USE AND FORMULATED AT 3.8 LB ACID EQUIVALENT PER GALLON.

(4) USE AT LOCATIONS AS DIRECTED BY THE ENGINEER. COORDINATE WITH MOWING TO LIMIT WEED SEED SPREADING.

(5) MOW AT LOCATIONS AS DIRECTED BY THE ENGINEER. ENSURE MOWING OPERATIONS WILL NOT DAMAGE PREVIOUSLY PLACED EROSION CONTROL PRODUCTS OR SPREAD WEED SEEDS.

(6) DEPTH IS APPROXIMATELY 3'. FIELD VERIFY PRIOR TO PROVIDING CURTAIN ON SITE (INCIDENTAL).

(7) INCLUDES ALL REQUIRED MAINTENANCE, REPLACEMENT, AND REMOVAL FOR THE DURATION OF THE PROJECT.

(8) STRAW OPTION

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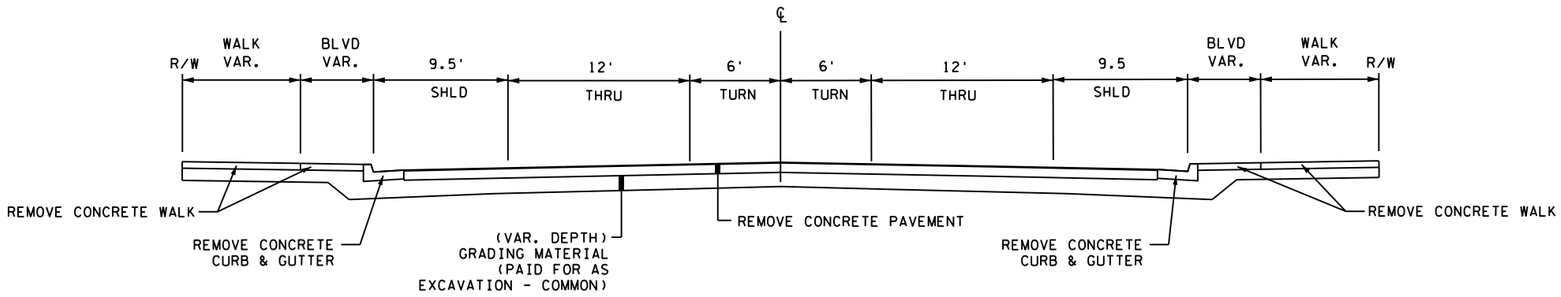
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LIC. NO. 54689 DATE 12-27-2018

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CHECKED TL

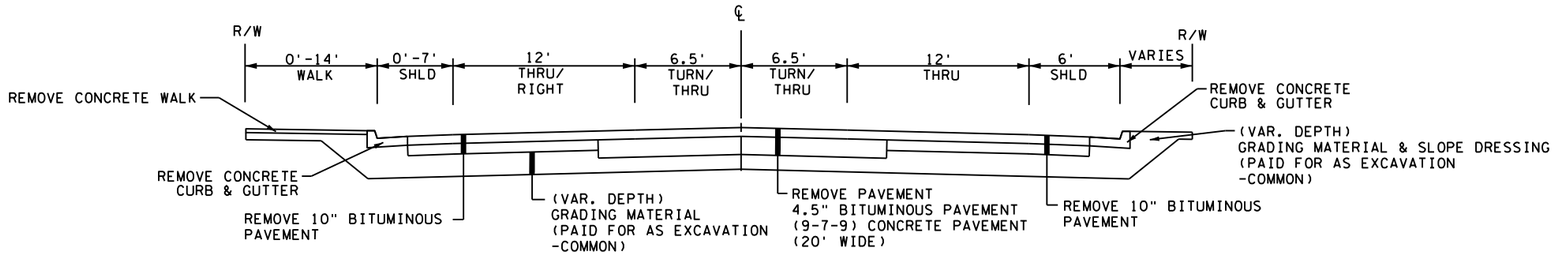
S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
QUANTITY TABULATION

EXISTING TYPICAL SECTION - T.H. 12/22
STA. 661+51.07 TO STA. 12+87.87

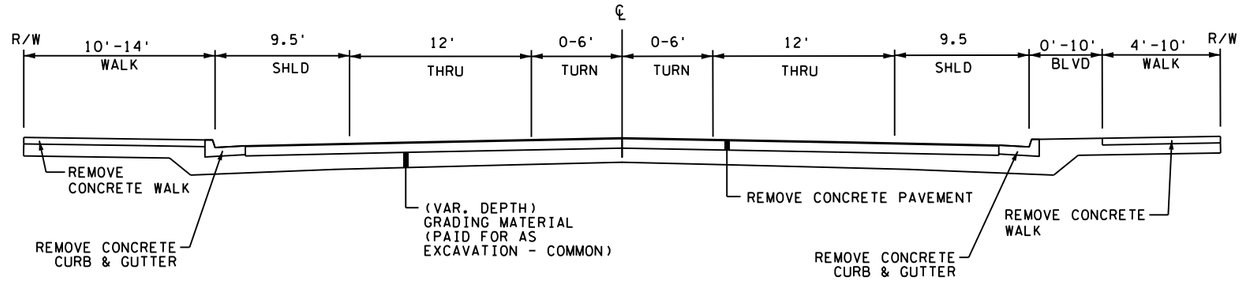


NOTE:
PAVEMENT CROSS SLOPES VARY.
SEE CROSS SECTIONS FOR
EXISTING CROSS SLOPES.

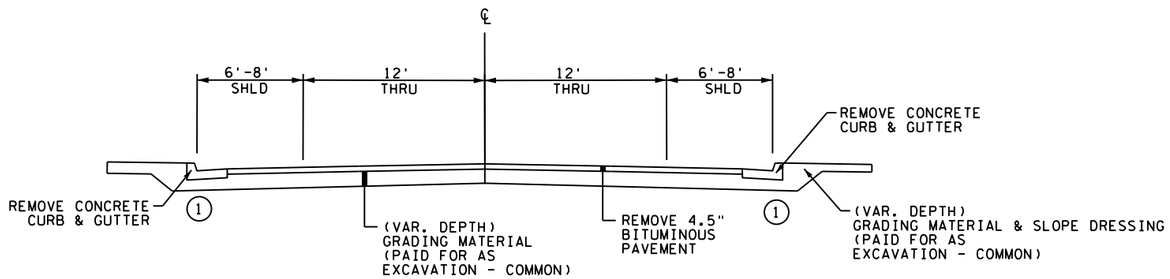
EXISTING TYPICAL SECTION - T.H. 12
STA 12+80.87 TO 21+36.33



EXISTING TYPICAL SECTION - T.H. 22
STA 63+19.45 TO STA 68+85.75



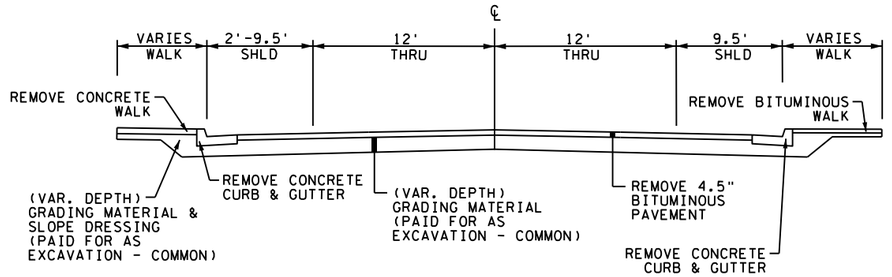
EXISTING TYPICAL SECTION - 4TH STREET
STA 100+16.38 TO STA 121+12.66



(1) CURB & GUTTER FROM STA. 113+20 TO 121+13

EQUATIONS
T.H. 12/22 (TH12_NORTH) STA. BK 661+69.42 R1 =
T.H. 12/22 (TH12_NORTH) STA. AH 0+00.00 R2

EXISTING TYPICAL SECTION - HOLCOMBE AVE.
STA. 200+36.97 TO STA. 203+94.95



EXISTING PAVEMENT THICKNESS

APPROXIMATE LOCATION	MATERIAL	THICKNESS
T.H. 12/22	BITUMINOUS OVER NON-REINFORCED CONCRETE	0.625" BIT/ 8" CONCRETE (2) (3)
T.H. 12	BITUMINOUS OVER NON-REINFORCED CONCRETE	4.5" BIT/ (9-7-9)" CONCRETE
T.H. 22	BITUMINOUS OVER NON-REINFORCED CONCRETE	0.625" BIT/ 8" CONCRETE (2) (3)
4TH STREET / HOLCOMBE AVE	BITUMINOUS	4.5"

NOTE: EXISTING PAVEMENT DEPTHS ARE APPROXIMATE AND ARE REFERENCED IN THE SOILS REPORT. FIELD VERIFY THICKNESS. VARIANCE IN PAVEMENT THICKNESS WILL NOT BE COMPENSATED AND IS INCIDENTAL.

(2) ULTRA THIN BONDED WEARING COURSE

(3) DOWELED FROM: T.H. 12 (NORTH) STA. 0+00 TO STA.1+95
T.H. 12 (NORTH) STA. 12+26 TO T.H. 22 STA. 63+34

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S.A.P. 135-010-009
S.A.P. 135-117-005

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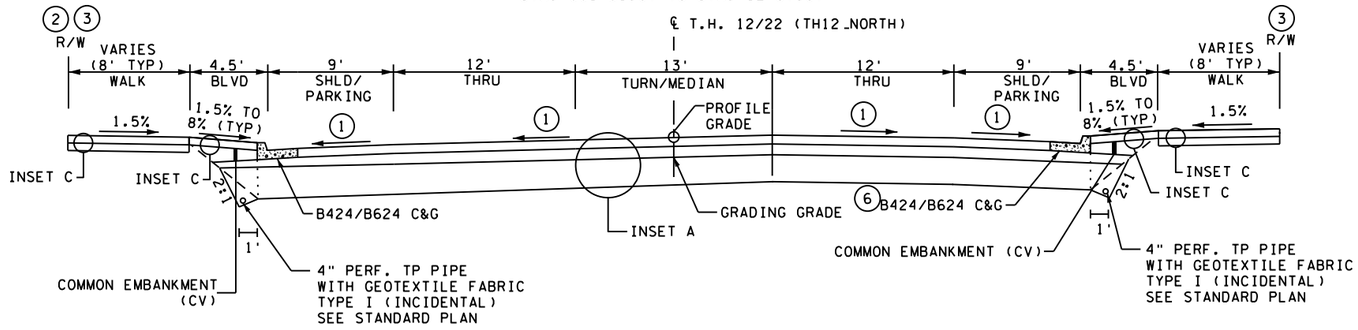
ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

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DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
TYPICAL SECTIONS

SHEET 21 OF 239

PROPOSED TYPICAL SECTION - T.H. 12/22
STA. 661+51.07 TO STA. 12+87.87



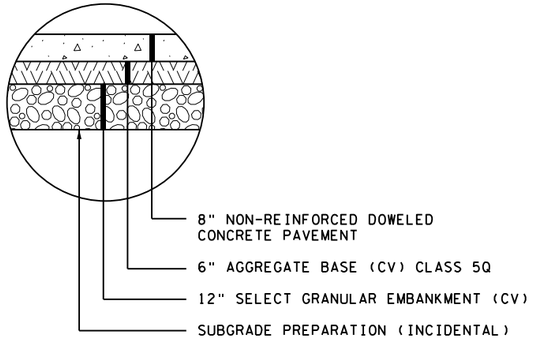
GENERAL NOTES:

THE GRADING GRADE AND SUBCUT CROSS SLOPES WILL BE THE SAME AS THE PROPOSED PAVEMENT SURFACE.

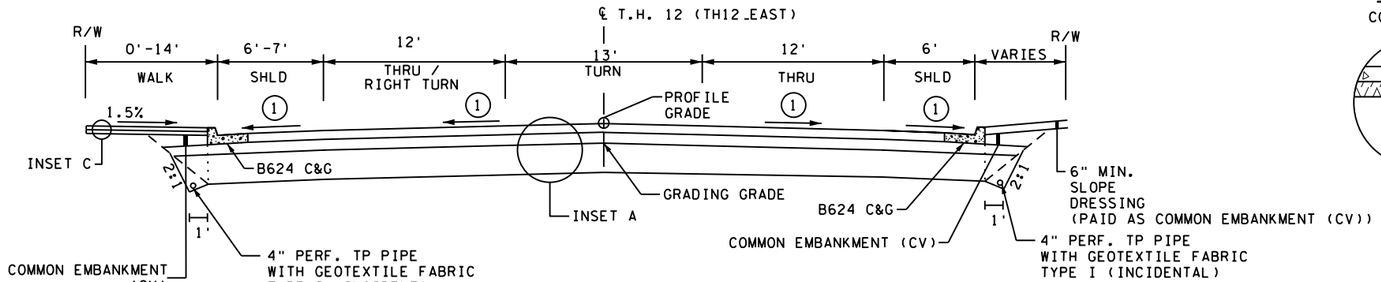
1. PROPOSED CROSS SLOPES VARY. SEE SUPERELEVATION SHEETS FOR CROSS SLOPE INFORMATION.
2. BACK OF WALK 1-FT INSIDE R/W FROM STA. 0+70 TO STA. 4+40
3. BACK OF WALK AT BUILDING FACE FROM STA. 4+40 TO STA. 12+79 LT., STA. 2+10 TO STA. 12+79 RT.
4. SEE CONSTRUCTION PLANS FOR INTERMITTENT B618 C&G LOCATIONS.
5. DRIVEWAY BETWEEN STA. 100+80 TO STA. 104+00, MATCH ADJACENT ROADWAY SECTION (INSET B).
6. SEE CONSTRUCTION PLAN SHEETS FOR CURB & GUTTER TRANSITION LOCATIONS

EQUATIONS
T.H. 12/22 (TH12_NORTH) STA. BK 661+69.42 R1 =
T.H. 12/22 (TH12_NORTH) STA. AH 0+00.00 R2

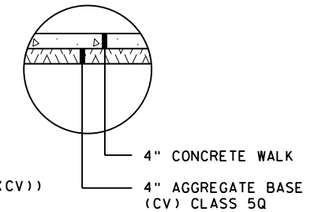
INSET A
CONCRETE PAVEMENT



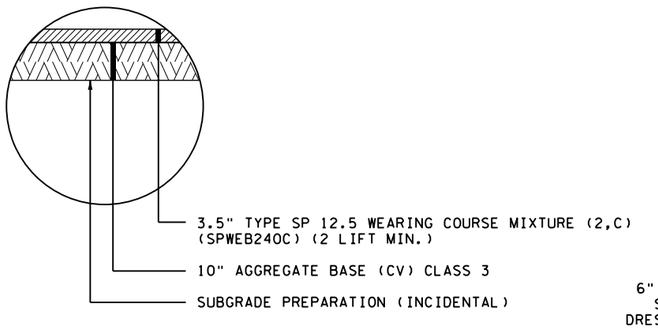
PROPOSED TYPICAL SECTION - T.H. 12
STA. 12+80.87 TO STA.21+36.33



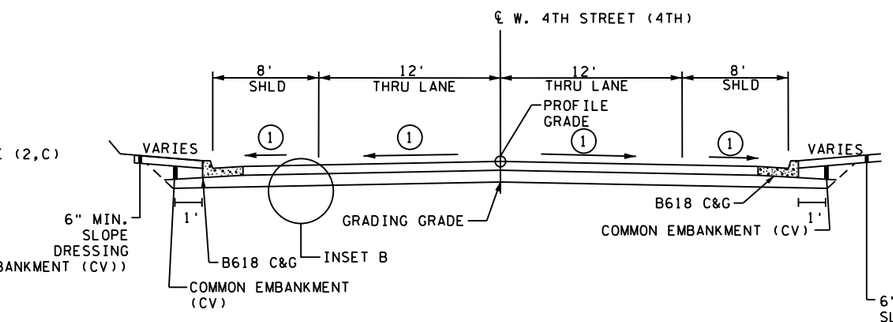
INSET C
CONCRETE WALK



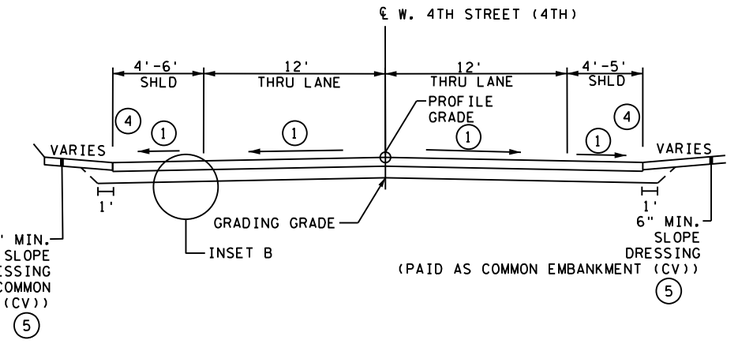
INSET B
BITUMINOUS PAVEMENT



PROPOSED TYPICAL SECTION - 4TH STREET
STA. 113+17.00 TO STA. 121+12.66



PROPOSED TYPICAL SECTION - 4TH STREET
STA. 100+16.38 TO STA. 113+17.00



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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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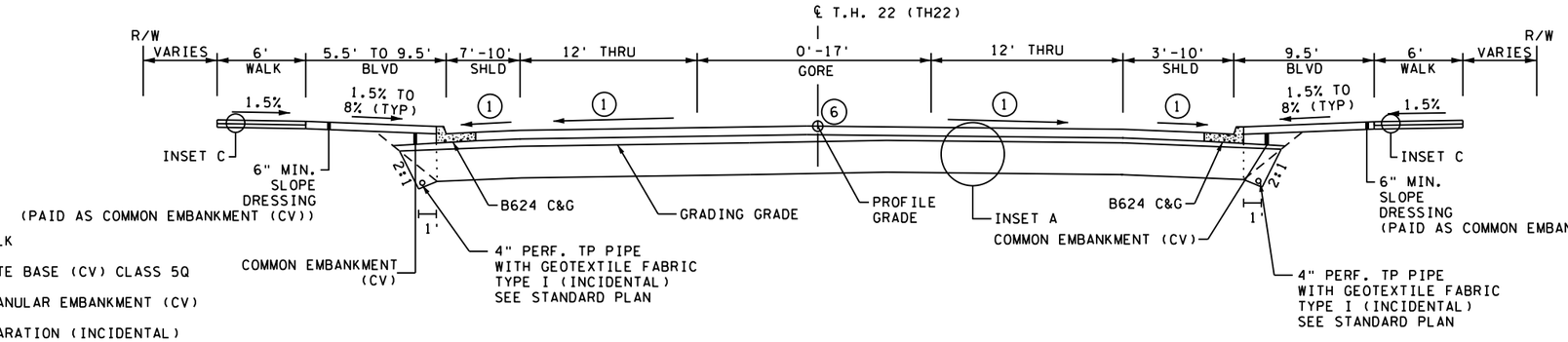
ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	DRAWN	CHECKED
AHK	TWB	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
TYPICAL SECTIONS

SHEET 22 OF 239

PROPOSED TYPICAL SECTION - T.H. 22
STA 63+19.45 TO 66+58.58

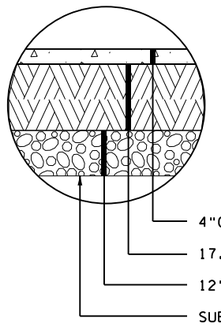


GENERAL NOTES:

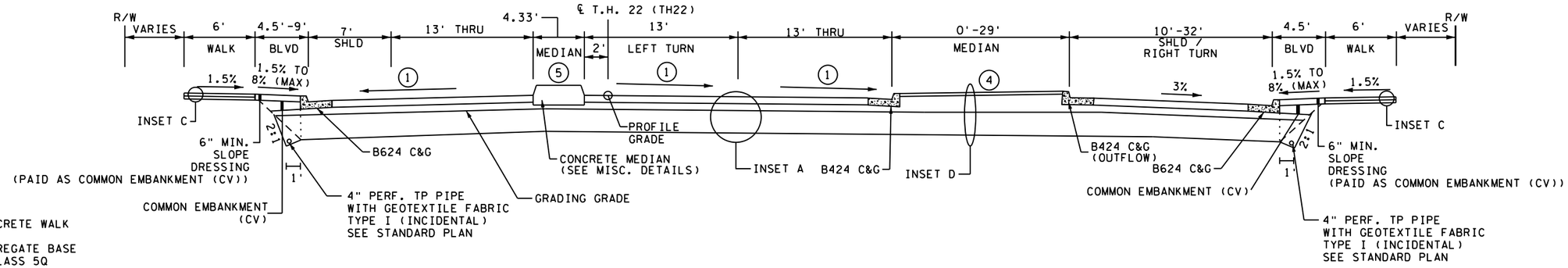
THE GRADING GRADE AND SUBCUT CROSS SLOPES WILL BE THE SAME AS THE PROPOSED PAVEMENT SURFACE.

1. PROPOSED CROSS SLOPES VARY. SEE SUPERELEVATION SHEETS FOR CROSS SLOPE INFORMATION.
4. STA. 68+05 TO STA. 68+53
5. STA. 67+28 TO STA. 67+95
6. SEE CONSTRUCTION PLANS FOR MEDIAN LOCATION.

INSET D
CONCRETE MEDIAN

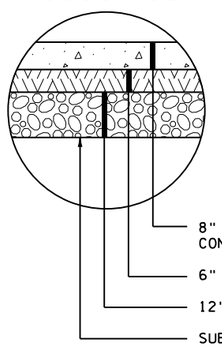


PROPOSED TYPICAL SECTION - T.H. 22
STA 67+13.77 TO 68+85.75

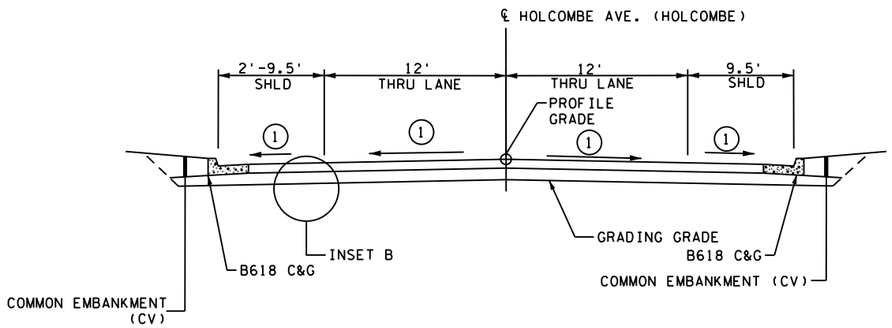


INSET C
CONCRETE WALK

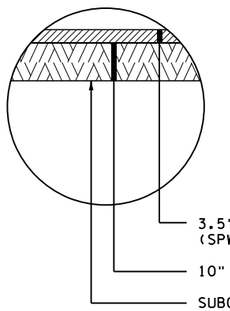
INSET A
CONCRETE PAVEMENT



PROPOSED TYPICAL SECTION - HOLCOMBE AVE.
STA. 200+36.97 TO STA. 203+94.95



INSET B
BITUMINOUS PAVEMENT



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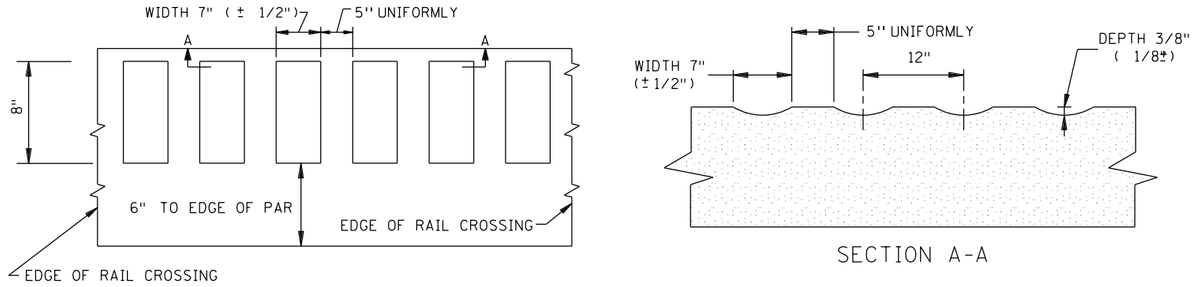
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ANDREW H. KROG
LIC. NO. 54689
DATE 12-27-2018

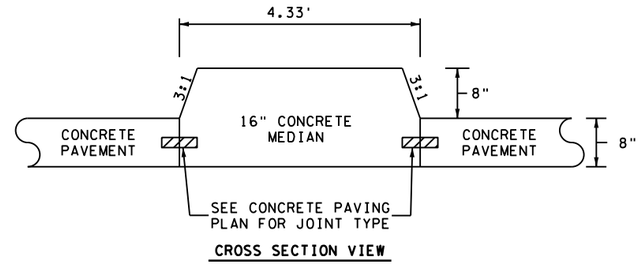
DESIGNED	DRAWN	CHECKED
AHK	TWB	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
TYPICAL SECTIONS

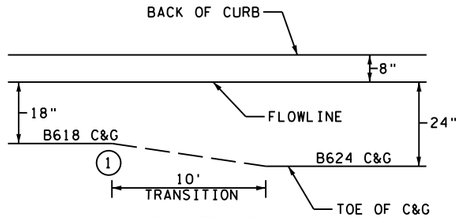
SHEET 23 OF 239



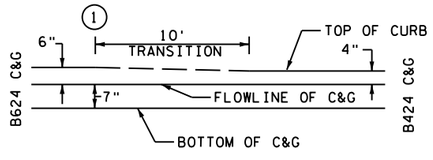
BITUMINOUS RUMBLE STRIP



CONCRETE MEDIAN



B618 TO B624
PLAN VIEW
NOT TO SCALE

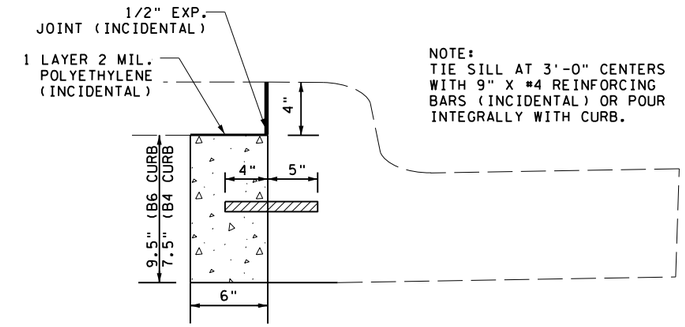


B624 TO B424
PROFILE VIEW
NOT TO SCALE

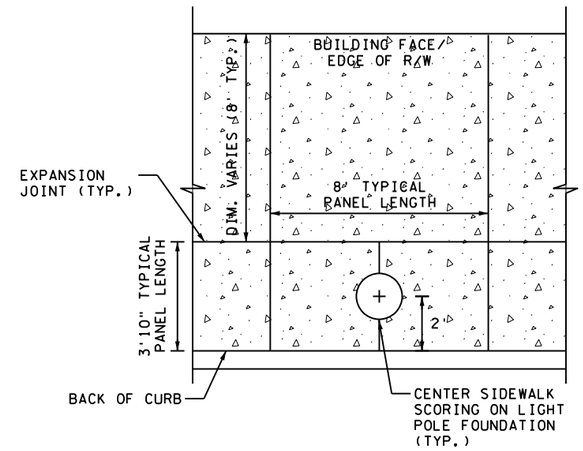
(1) BEGIN STA OF TRANSITION
SEE CONSTRUCTION PLANS

CURB & GUTTER TRANSITION DETAILS

(PAID FOR AS B624 C&G)

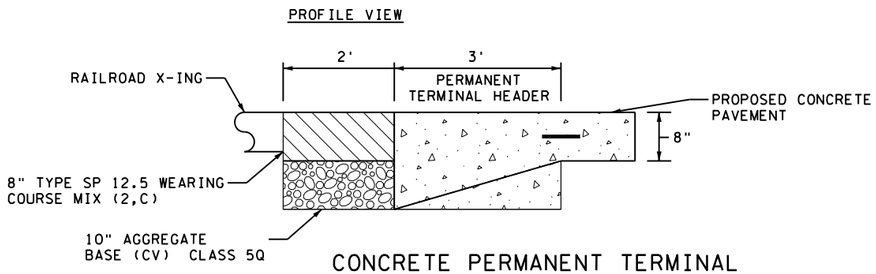


CONCRETE SILL DETAIL

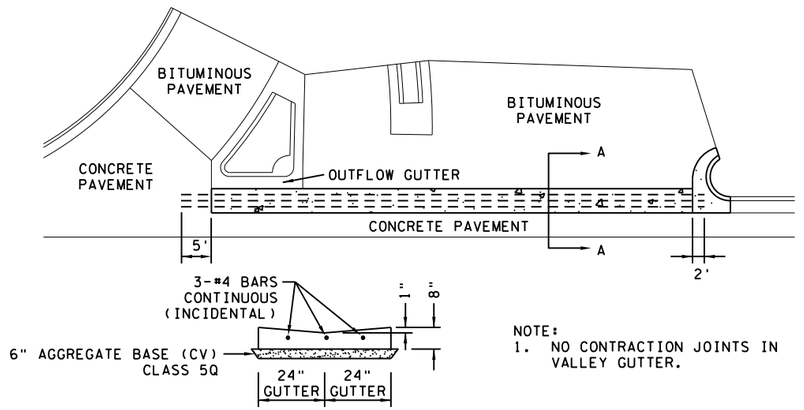


SIDEWALK SCORING & LIGHTING LOCATION DETAIL

NOT TO SCALE



CONCRETE PERMANENT TERMINAL HEADER AT RAILROAD CROSSING



NOTE:
1. NO CONTRACTION JOINTS IN VALLEY GUTTER.

8" CONCRETE VALLEY GUTTER AT MARSHALL AVE

NOT TO SCALE

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	DRAWN	CHECKED
AHK	TWB	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
MISCELLANEOUS DETAILS

SHEET 24 OF 239

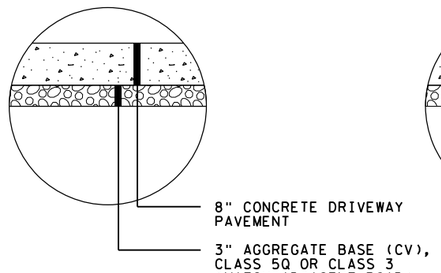
DRIVEWAY TABULATION

STREET & STATIONING	SIDE	DRIVEWAY TYPE (MATERIAL)	CURB TYPE	E1	E2	L1 FT	S1 %	E3	L2 FT	S2 %	E4	L3 FT	S3 %	EXISTING %	E5	COMMENTS
W. 4TH STREET																
104+15	RIGHT	PERPENDICULAR(CONC.)	NO CURB	-	1118.68 (1)	10.00	6.20	1119.30								
106+95	RIGHT	PERPENDICULAR (AGG.)	NO CURB	-	1120.84 (1)	10.00	1.70	1121.01								
107+49	LEFT	PERPENDICULAR (BIT.)	NO CURB	-	1121.22 (1)	12.50	9.04	1122.35								MATCH EXISTING SIDEWALK
108+19	LEFT	PERPENDICULAR (AGG.)	NO CURB	-	1121.36 (1)	12.50	5.84	1122.09								MATCH EXISTING SIDEWALK
108+49	RIGHT	PERPENDICULAR (CONC.)	NO CURB	-	1121.51 (1)	10.00	4.00	1121.91								
110+80	RIGHT	PERPENDICULAR (CONC.)	NO CURB	-	1123.10 (1)	10.00	5.75	1123.67								
111+17	LEFT	PERPENDICULAR (AGG.)	NO CURB	-	1123.47 (1)	10.50	2.51	1123.73								MATCH EXISTING SIDEWALK
111+22	RIGHT	PERPENDICULAR (CONC.)	NO CURB	-	1123.41 (1)	10.00	6.45	1124.05								
111+46	RIGHT	PERPENDICULAR (CONC.)	NO CURB	-	1123.59 (1)	10.00	4.85	1124.07								
114+01	LEFT	PERPENDICULAR (CONC.)	STANDARD	1126.52	1126.60	7.80	2.68	1126.81								MATCH EXISTING SIDEWALK
114+35	RIGHT	PERPENDICULAR (BIT.)	STANDARD	1126.84	1126.92	10.00	9.89	1127.91								
114+69	LEFT	PERPENDICULAR (CONC.)	STANDARD	1127.19	1127.27	7.75	3.34	1127.53								MATCH EXISTING SIDEWALK
114+80	RIGHT	PERPENDICULAR (BIT.)	STANDARD	1127.30	1127.38	10.00	6.79	1128.06								
115+03	RIGHT	PERPENDICULAR (CONC.)	STANDARD	1127.54	1127.62	10.00	6.59	1128.28								
115+26	LEFT	PERPENDICULAR (CONC.)	STANDARD	1127.75	1127.83	7.60	4.86	1128.20								MATCH EXISTING SIDEWALK
118+82	LEFT	PERPENDICULAR (CONC.)	STANDARD	1128.86	1128.94	7.90	3.28	1129.20								MATCH EXISTING SIDEWALK
T.H. 22																
63+73	LEFT	PERPENDICULAR (CONC.)	STANDARD	1128.11	1128.19	8.83	3.59	1128.51	6.00	1.50	1128.60	4.00	1.50	1.25	1128.66	MATCH EXISTING BITUMINOUS
66+01	RIGHT	PERPENDICULAR (CONC.)	STANDARD	1129.51	1129.59	8.83	3.36	1129.89	6.00	1.50	1129.98	1.50	-2.00	-3.80	1129.95	MATCH EXISTING AGGREGATE (2)
66+26	LEFT	PERPENDICULAR (CONC.)	STANDARD	1129.54	1129.62	6.13	5.37	1129.95	6.00	1.50	1130.04	3.50	-1.14	-2.00	1130.00	MATCH EXISTING AGGREGATE (2)
T.H. 12																
15+55	RIGHT	PERPENDICULAR (CONC.)	TYPE 2	1128.52	1128.68	5.00	9.12	1129.14				4.00	-2.00	FLAT	1129.06	MATCH EXISTING AGGREGATE (2)
15+67	LEFT	PERPENDICULAR (CONC.)	STANDARD	1128.43	1128.51	6.33	9.62	1129.12	6.00	1.50	1129.21					MATCH EXISTING SIDEWALK
16+70	RIGHT	PERPENDICULAR (CONC.)	STANDARD	1127.94	1128.02	5.00	6.98	1128.37				5.00	-2.00	FLAT	1128.27	MATCH EXISTING AGGREGATE (2)
19+66	RIGHT	PERPENDICULAR (CONC.)	TYPE 2	1127.32	1127.48	10.00	9.26	1128.41						-2.00		MATCH EXISTING AGGREGATE (2)
21+18	RIGHT	PERPENDICULAR (CONC.)	STANDARD	1127.96	1128.04	4.33	4.37	1128.23								MATCH EXISTING
HOLCOMBE AVE.																
202+00	LEFT	PERPENDICULAR (CONC.)	TYPE 3	1127.08	1127.33	3.33	9.61	1127.65	4	1.5	1127.71	5	6.00	1.00	1128.01	
202+67	LEFT	PERPENDICULAR (CONC.)	TYPE 3	1127.43	1127.68	10.20	10.20	1128.72						13.53		MATCH EXISTING
203+61	LEFT	PERPENDICULAR (CONC.)	STANDARD	1126.99	1127.07	5.85	4.73	1127.35								MATCH EXISTING SIDEWALK

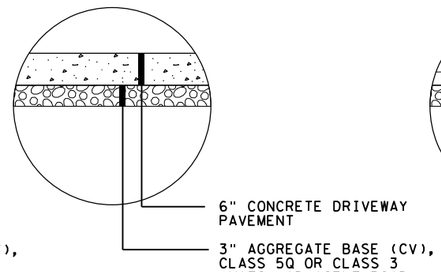
NOTES
(1) EDGE OF PAVEMENT
(2) MAINTAIN NEGATIVE SLOPE BEHIND SIDEWALK/DRIVEWAY

DRIVEWAY DETAILS

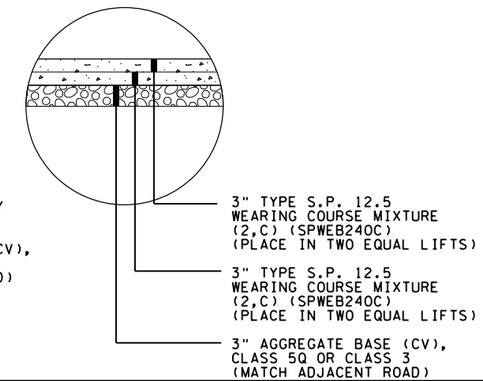
CONCRETE (COMMERCIAL)



CONCRETE (RESIDENTIAL)



BITUMINOUS (RESIDENTIAL)



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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
MISCELLANEOUS DETAILS

SHEET 25 OF 239

BELOW GRADE STRUCTURE SCHEDULE

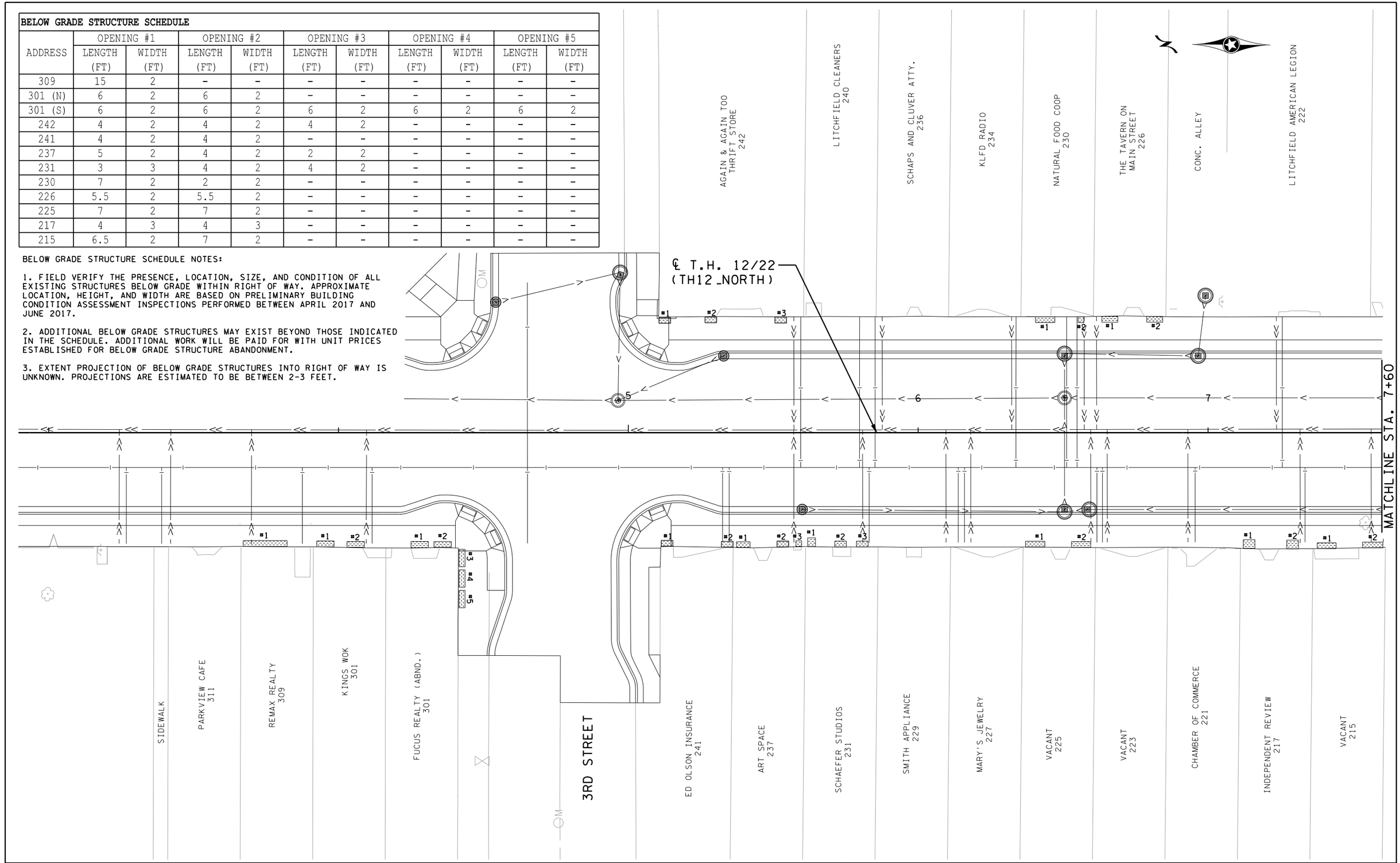
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301 (S)	6	2	6	2	6	2	6	2	6	2
242	4	2	4	2	4	2	–	–	–	–
241	4	2	4	2	–	–	–	–	–	–
237	5	2	4	2	2	2	–	–	–	–
231	3	3	4	2	4	2	–	–	–	–
230	7	2	2	2	–	–	–	–	–	–
226	5.5	2	5.5	2	–	–	–	–	–	–
225	7	2	7	2	–	–	–	–	–	–
217	4	3	4	3	–	–	–	–	–	–
215	6.5	2	7	2	–	–	–	–	–	–

BELOW GRADE STRUCTURE SCHEDULE NOTES:

1. FIELD VERIFY THE PRESENCE, LOCATION, SIZE, AND CONDITION OF ALL EXISTING STRUCTURES BELOW GRADE WITHIN RIGHT OF WAY. APPROXIMATE LOCATION, HEIGHT, AND WIDTH ARE BASED ON PRELIMINARY BUILDING CONDITION ASSESSMENT INSPECTIONS PERFORMED BETWEEN APRIL 2017 AND JUNE 2017.

2. ADDITIONAL BELOW GRADE STRUCTURES MAY EXIST BEYOND THOSE INDICATED IN THE SCHEDULE. ADDITIONAL WORK WILL BE PAID FOR WITH UNIT PRICES ESTABLISHED FOR BELOW GRADE STRUCTURE ABANDONMENT.

3. EXTENT PROJECTION OF BELOW GRADE STRUCTURES INTO RIGHT OF WAY IS UNKNOWN. PROJECTIONS ARE ESTIMATED TO BE BETWEEN 2-3 FEET.



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ERIC LEAGJELD
LIC. NO. 40430 DATE 12-27-2018

DESIGNED	DRAWN	CHECKED
EEL	TWB	TL

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T.H. 12/22 RECONSTRUCTION
STRUCTURAL DETAILS

SHEET 26 OF 239

BELOW GRADE STRUCTURE SCHEDULE

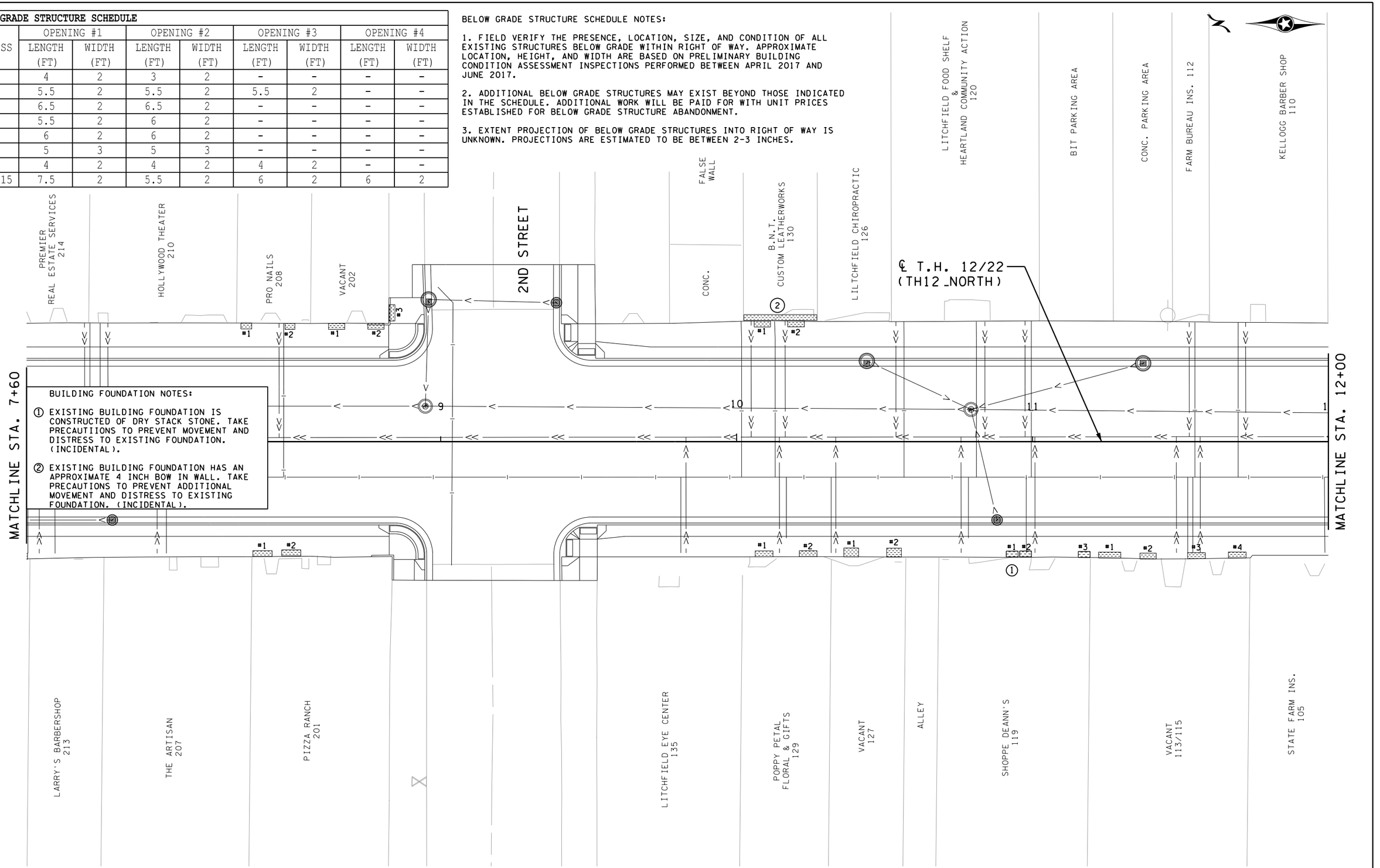
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202	5.5	2	5.5	2	5.5	2	-	-
201	6.5	2	6.5	2	-	-	-	-
130	5.5	2	6	2	-	-	-	-
129	6	2	6	2	-	-	-	-
127	5	3	5	3	-	-	-	-
119	4	2	4	2	4	2	-	-
113/115	7.5	2	5.5	2	6	2	6	2

BELOW GRADE STRUCTURE SCHEDULE NOTES:

1. FIELD VERIFY THE PRESENCE, LOCATION, SIZE, AND CONDITION OF ALL EXISTING STRUCTURES BELOW GRADE WITHIN RIGHT OF WAY. APPROXIMATE LOCATION, HEIGHT, AND WIDTH ARE BASED ON PRELIMINARY BUILDING CONDITION ASSESSMENT INSPECTIONS PERFORMED BETWEEN APRIL 2017 AND JUNE 2017.

2. ADDITIONAL BELOW GRADE STRUCTURES MAY EXIST BEYOND THOSE INDICATED IN THE SCHEDULE. ADDITIONAL WORK WILL BE PAID FOR WITH UNIT PRICES ESTABLISHED FOR BELOW GRADE STRUCTURE ABANDONMENT.

3. EXTENT PROJECTION OF BELOW GRADE STRUCTURES INTO RIGHT OF WAY IS UNKNOWN. PROJECTIONS ARE ESTIMATED TO BE BETWEEN 2-3 INCHES.



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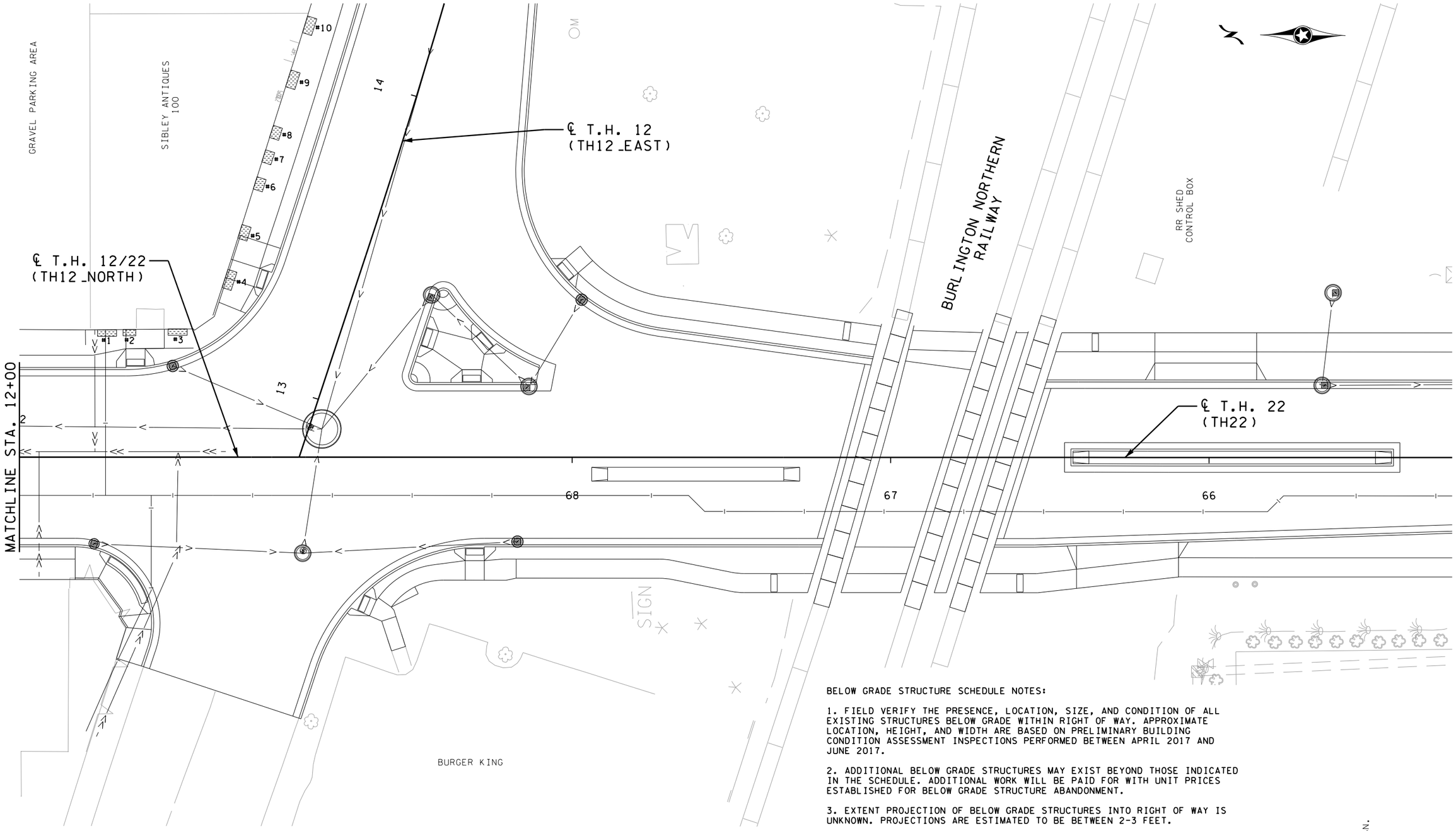
ERIC LEAGJELD
LIC. NO. 40430 DATE 12-27-2018

DESIGNED EEL
DRAWN TWB
CHECKED TL

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T.H. 12/22 RECONSTRUCTION
STRUCTURAL DETAILS

SHEET 27 OF 239

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BELOW GRADE STRUCTURE SCHEDULE NOTES:

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BELOW GRADE STRUCTURE SCHEDULE

ADDRESS	OPENING #1		OPENING #2		OPENING #3		OPENING #4		OPENING #5		OPENING #6		OPENING #7		OPENING #8		OPENING #9		OPENING #10	
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ERIC LEAGJELD
LIC. NO. 40430 DATE 12-27-2018

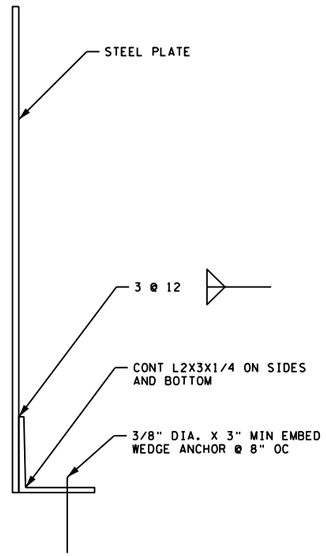
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CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
STRUCTURAL DETAILS

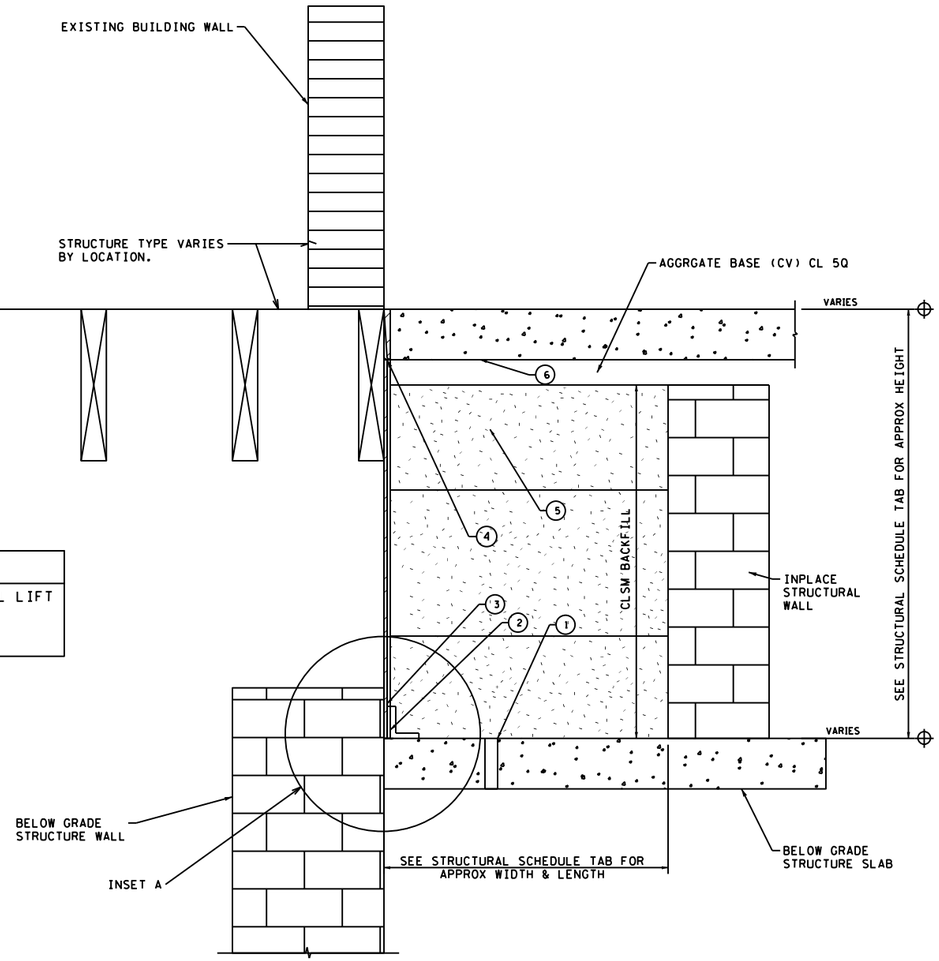
SHEET 28 OF 239

STEEL PLATE THICKNESS SCHEDULE

WIDTH RANGE	MINIMUM PLATE THICKNESS (IN)	MAX CLSM BACKFILL LIFT
0'0" - 4'0"	1/4	1'4"
4'0" - 5'6"	3/8	1'4"
5'6" - 8'0"	1/2	1'4"



INSET A



BELOW GRADE STRUCTURE RENOVATION
PROFILE VIEW

GENERAL NOTES:
FIELD VERIFY THE PRESENCE, LOCATION, SIZES AND CONDITION OF ALL EXISTING STRUCTURES BELOW GRADE WITHIN RIGHT OF WAY. APPROXIMATE LOCATION, HEIGHT, WIDTH, AND LENGTH ARE BASED ON PRELIMINARY BUILDING CONDITION ASSESSMENT INSPECTIONS PERFORMED BETWEEN APRIL 2017 AND JUNE 2017.

THE EXTENT/PROJECTION (WIDTH) OF BELOW GRADE STRUCTURES INTO RIGHT OF WAY IS UNKNOWN. PROJECTIONS ARE ESTIMATED TO BE BETWEEN 24-36 INCHES.

NOTIFY AND COORDINATE ALL WORK WITH BUILDING OWNER.

CONSTRUCTION NOTES:
RENOVATE EXISTING BELOW GRADE STRUCTURES IN ACCORDANCE WITH SPECIAL PROVISIONS.

BELOW GRADE STRUCTURES WITH EXISTING WINDOWS, CHUTES, DOORWAYS, AND SIMILAR STRUCTURES STILL INTACT SHALL BE COMPLETELY EXCAVATED AND EXISTING PROTECTIVE MATERIALS REMOVED AND DISPOSED OFF SITE. INCLUDES REMOVAL OF CEILING IF PRESENT. PAID FOR AS 2451 STRUCTURE EXCAVATION (CLASS E) (CY).

PROTECT EXISTING BUILDING STRUCTURE INCLUDING WINDOWS, FRAMES, ECT. FROM DAMAGE AND THE WEATHER. PROVIDE TEMPORARY COVER FOR BELOW GRADE STRUCTURES WHEN CONSTRUCTION IS NOT IN PROGRESS. SECURELY FASTEN TEMPORARY COVER. INCLUDED IN 2433 RECONSTRUCT FOUNDATION (EA).

FURNISH AND INSTALL PLATE STRUCTURE, PLACE SEALANT, WATERPROOFING MEMBRANE AND BACKFILL WITH CLSM. PROVIDE TEMPORARY BRACING DURING CLSM PLACEMENT. SEE SCHEDULE FOR REQUIRED MINIMUM PLATE THICKNESS. INCLUDED IN RECONSTRUCT FOUNDATION (EA).

UTILIZE ALTERNATE ANCHORAGE DETAIL (INSET A) WHEN INSUFFICIENT PROJECTION EXIST BETWEEN EDGE OF EXISTING OPENING AND BELOW GRADE STRUCTURE. INCLUDED IN 2433 RECONSTRUCT FOUNDATION (EA).

NOTES:

(1) DRILL A LINE OF 1" MINIMUM DIAMETER HOLES, IN THE BASE SLAB, WHERE PRESENT. CENTER THE LINE OF HOLES ON THE SLAB WIDTH AT 2' MAX. OC. FILL THE HOLES WITH CLEAN SAND. INCLUDED IN 2433 RECONSTRUCT FOUNDATION (EA).

(2) VERTICAL LIMITS OF STEEL PLATE SHALL EXTEND FROM 1" BELOW TOP OF FINISHED SIDEWALK TO TOP OF EXISTING SLAB/BASE OF STRUCTURE. HORIZONTAL LIMITS SHALL EXTEND A MINIMUM OF 4 INCHES ON EACH SIDE OF EXISTING OPENING. SEE ALTERNATE DETAILS (INSET A) FOR OTHER CONDITIONS. INCLUDED IN 2433 RECONSTRUCT FOUNDATION (EA).

(3) PLACE A CONTINUOUS BEAD OF CAULKING COMPOUND BETWEEN THE EXISTING FOUNDATION WALL AND STEEL PLATE. PLACE 1 INCH FROM EDGE OF EXISTING OPENING. INCLUDED IN 2433 RECONSTRUCT FOUNDATION (EA).

(4) EXTEND MEMBRANE WATERPROOFING SYSTEM A MINIMUM OF 4 INCHES BEYOND LIMITS OF STEEL PLATE. EXTEND MEMBRANE ON TOP TO BE FLUSH WITH TOP OF SIDEWALK. INCLUDED IN 2433 RECONSTRUCT FOUNDATION (EA).

(5) PLACE CLSM BACKFILL IN LIFTS TO PREVENT EXCESSIVE STRESS AND DAMAGE TO EXISTING BUILDING STRUCTURE. PAID FOR AS 2519 CLSM LOW DENSITY (CY)

(6) CONCRETE WALK, SEE CONSTRUCTION PLANS.

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S.A.P. 135-010-009
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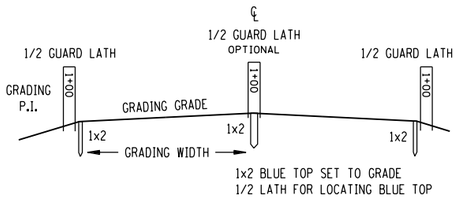
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S.P. 4704-89 (T.H. 12)
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STRUCTURAL DETAILS

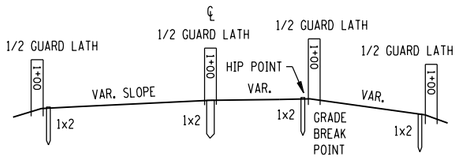
SHEET 29 OF 239

BLUE TOPS

NORMAL SECTION

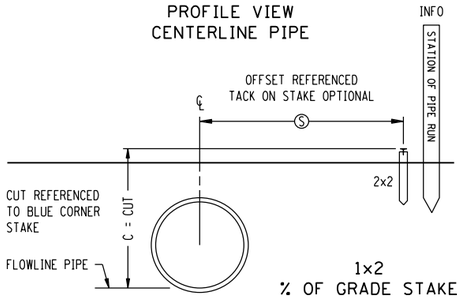


TRANSITION SECTION

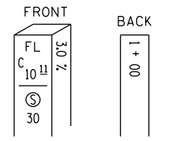


PIPE STAKING

PROFILE VIEW CENTERLINE PIPE

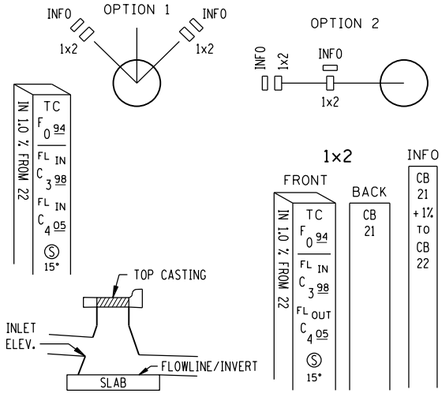


1x2 % OF GRADE STAKE



CATCH BASIN OR MANHOLE (CB/MH)

TOP VIEWS

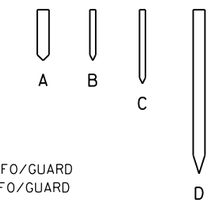


FLOWLINE/INVERT + 0.7'

STANDARD STAKES

TYPES:

REFERENCE (REF)
INFORMATIONAL (INFO)
VISIBILITY (VIS)
GUARD (GUARD)



SIZES:

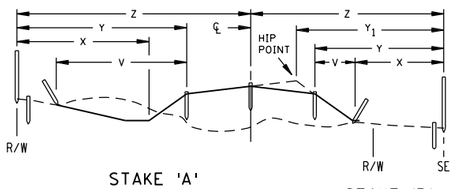
A = 2" X 2" X VAR. REF/INFO/GUARD
B = 1" X 2" X VAR. REF/INFO/GUARD
C = 1" X 2" X VAR. REF
D = LATH INFO/VIS/GUARD
1x2 OR LATH = INFO STAKES

ABBREVIATIONS

BBL = BARREL (PIPE)
B.C. = BACK CURB
C & G = CURB & GUTTER
C = CUT
CAP = CORR. ALUM. PIPE
CB = CATCH BASIN
℄ = CENTERLINE
CL & GR = CLEAR & GRUB
CMP = CORR. METAL PIPE
COR = CORNER
CR = CROWN
CSP = CORR. STEEL PIPE
℄ = DITCH CUT
D.E. = DRAINAGE EASEMENT
DI = DROP INLET
EB = EASTBOUND
E.M. = EDGE BITUMINOUS MAT
E.S. = EDGE CONCRETE SLAB
F = FILL
FF = FRONT FACE
FL = FLOW LINE
FL IN = FLOWLINE INLET
FL OUT = FLOWLINE OUTLET
GR = GRADE
GW = GRADING WIDTH
HH = HANDHOLE
HP = HIP POINT
LT = LEFT
MH = MANHOLE
NB = NORTHBOUND
Ⓢ = OFFSET
PAR = PARCEL
% = PERCENT GRADE
P.E. = PERM. EASEMENT
RAD = RADIUS POINT
RCP = REINF. CONC. PIPE
RP = REFERENCE POINT
RSC = REINF. SECT. CONC.
RT = RIGHT
R/W = RIGHT OF WAY
SB = SOUTHBOUND
SCP = SECT. CONC. PIPE
SH = SHOULDER
TC = TOP CASTING OR TOP CURB
T.E. = TEMP. EASEMENT
3 : 1 = SLOPE (EXAMPLE)
WB = WESTBOUND
WP = WORKING POINTS

SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'A'



STAKE 'A'

FULL LATH AND HUB-STATION
DIST. TO ℄ WITH CUT/FILL TO ℄ (Z)
DIST. TO SHLD. WITH CUT/FILL TO SHLD. (Y) (Y1)
DIST. TO TOE OF SLOPE, CUT/FILL FROM HUB (X)
OFFSET TO SAFTY SLOPE
OFFSET TO HIP POINT

STAKE 'B'

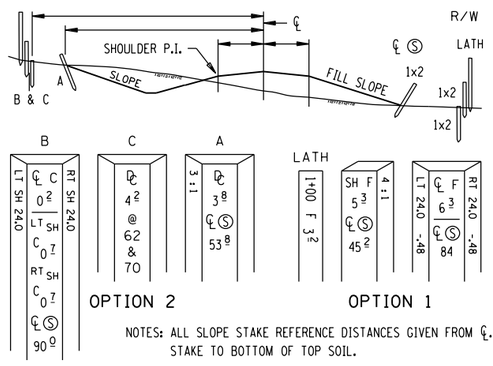
FULL LATH
DITCH CUT/SHLD. FILL
SLOPE RATED
DISTANCE TO INSLOPE TOE (V1) OR SHOULDER (AS APPLIES) (V)

NOTE:

BLUE TOPS REQUIRED ON ℄ AND BOTH SHOULDERS AT MINIMUM
ALL CULVERTS TO BE STAKED
MINIMUM DATA TO BE PROVIDED
STAKE TO BOTTOM OF TOPSOIL

SLOPE STAKES

SINGLE ROADWAY - EXAMPLE 'B'

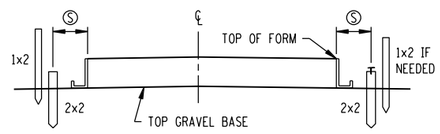


OPTION 2 OPTION 1

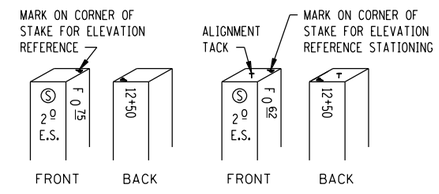
NOTES: ALL SLOPE STAKE REFERENCE DISTANCES GIVEN FROM ℄. STAKE TO BOTTOM OF TOP SOIL.

KEY STAKES: BLUE TOP SET AT R/W BOUNDARY LT. & RT. MAY BE EXCEPTIONS TO SETTING STAKE ON R/W.

CONCRETE PAVING STATIONARY FORM



OFFSET TO CONTRACTOR'S OPTION



NOTE INFORMATION ON STAKE IF NECESSARY

RECOMMENDED STAKING INTERVALS

FIGURE A

	SLOPE STAKES	SUB GRADE B.T.	CLASS MATERIAL B.T.	CONC PAVT	C & G	CL & GR LIMITS	MUCK EXC.	R/W	TEMP. EASE.
TANGENT	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
HORIZ. CURVE									
0 - 3°	100	100	100	50	50	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
OVER 3° -	100	50	50	25	25	ALL CORNERS	100	ALL CORNERS	ALL CORNERS
VERT. CURVE									
'M' 100' CHORD 0 - .25	100	100	100	50	50				
'M' OVER .25	100	50	50	25	25				
TRAN.		50	50						

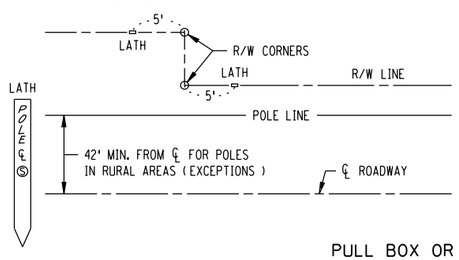
STAKING TOLERANCES (FEET)

	HORIZONTAL	VERTICAL
CONSTRUCTION LIMITS	± 1.5	
CLEARING & GRUBBING	2.0	
SLOPES STAKES	2.0	± 0.2
KEY STAKES	0.2	0.03
DRAINAGE STAKES	0.05	0.05
CURB & GUTTER	0.07	0.03
PAVING	0.05	0.03
ALIGNMENT	0.07	
UTILITY	0.10	0.05
STRUCTURAL	0.02	0.02
GUARD RAIL	0.5	
BUILDINGS	0.04	
O.H. SIGNS	0.05	0.05
MUCK EXCAVATION LIMITS	2.0	
R/W B-POINTS	0.10	
NOISE WALLS	1.0	0.5

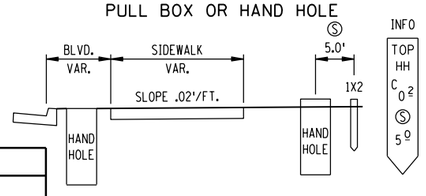
THE TOLERANCES ARE RELATIVE TO PROJECT DATUM

UTILITY (UTIL)

STAKE POLES MINIMUM OF 5 FT. FROM ANY R/W CORNER
EXAMPLE: POLE LINE = R/W LINE

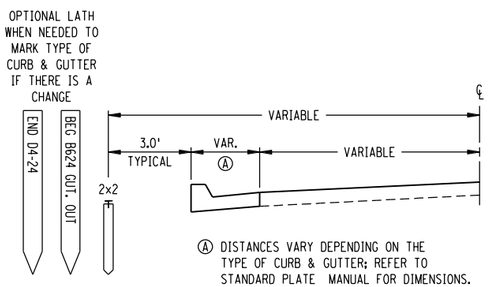


PULL BOX OR HAND HOLE

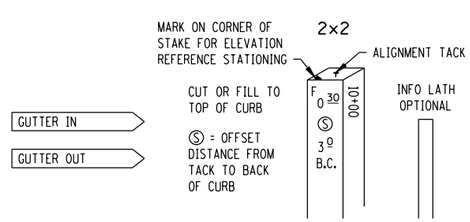


CURB & GUTTER (CURB)

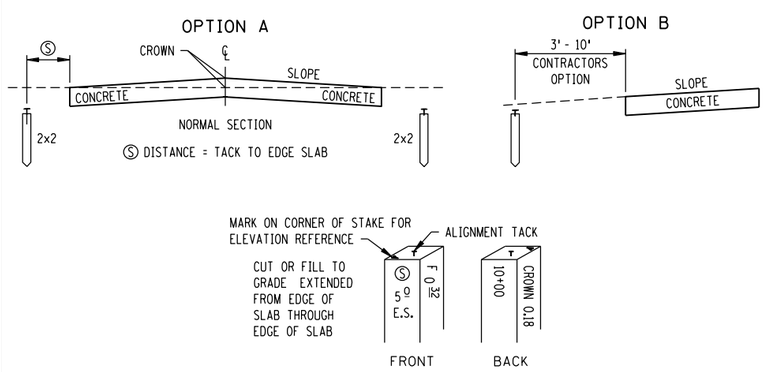
OPTIONAL LATH WHEN NEEDED TO MARK TYPE OF CURB & GUTTER IF THERE IS A CHANGE



Ⓐ DISTANCES VARY DEPENDING ON THE TYPE OF CURB & GUTTER; REFER TO STANDARD PLATE MANUAL FOR DIMENSIONS.



CONCRETE PAVING - SLIP FORM



DISCLAIMER

THESE STAKING INFORMATION SHEETS ARE FOR INFORMATION PURPOSES ONLY. STAKING PROCEDURES VARY AND MAY BE SUBJECT TO CHANGE DURING CONSTRUCTION BY CIRCUMSTANCES AND/OR AGREEMENTS BETWEEN SURVEY CREW AND CONTRACTOR.

REVISION:

APPROVED: 8-6-2014
DIRECTOR, OFFICE OF LAND MANAGEMENT

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.115 | **1 OF 2**

APPROVED: 8-6-2014
REVISED:

STATE DESIGN ENGINEER

STAKING INFORMATION SHEET

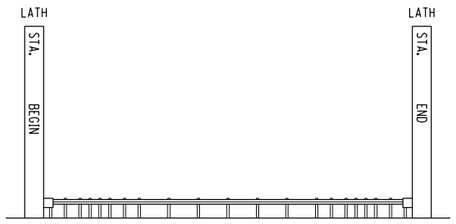
S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

S.P. NO. 4704-89 (T.H. 12)

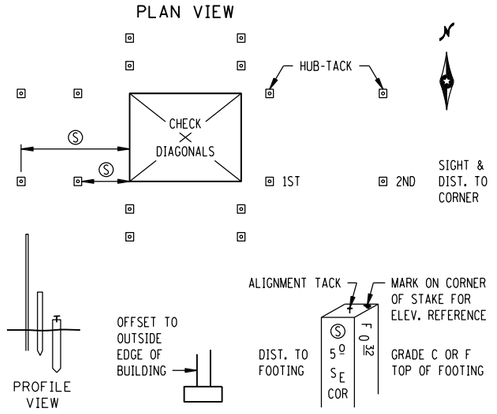
SHEET NO. 30 OF 239 SHEETS

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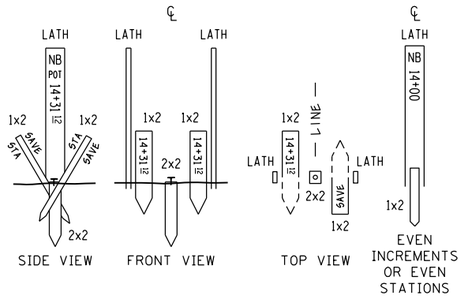
GUARDRAIL (GUARD)



BUILDING (BUILD) FOUNDATION / FOOTING



ALIGNMENT POINTS (ALIGN)



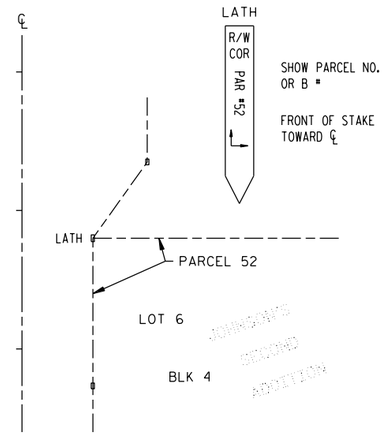
STAKE C = 2" X 2" HUB (LENGTH MAY VARY) SET AS TEMPORARY STAKE. MAY BE REPLACED BY MnDOT MARKER AFTER CONSTRUCTION IS COMPLETED.

SET AT GROUND LEVEL (TEMPORARY CONSTRUCTION STAKE).

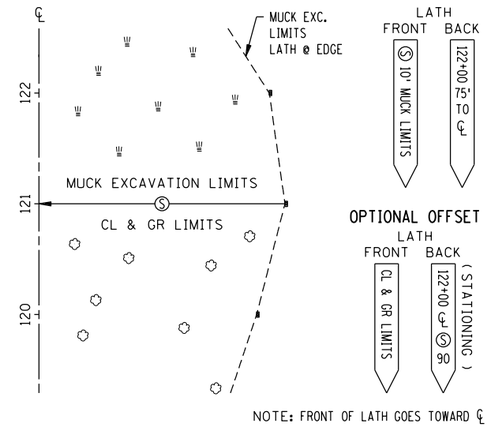
TACK SET AT ALIGNMENT POINTS.

STAKE A = GUARD STAKES SET AT ANGLE IN GROUND 6" EACH SIDE OF STAKE D, WITH STATIONING READ WHEN LOOKING UP STATION.

R/W & TEMP. EASEMENT (R/W)

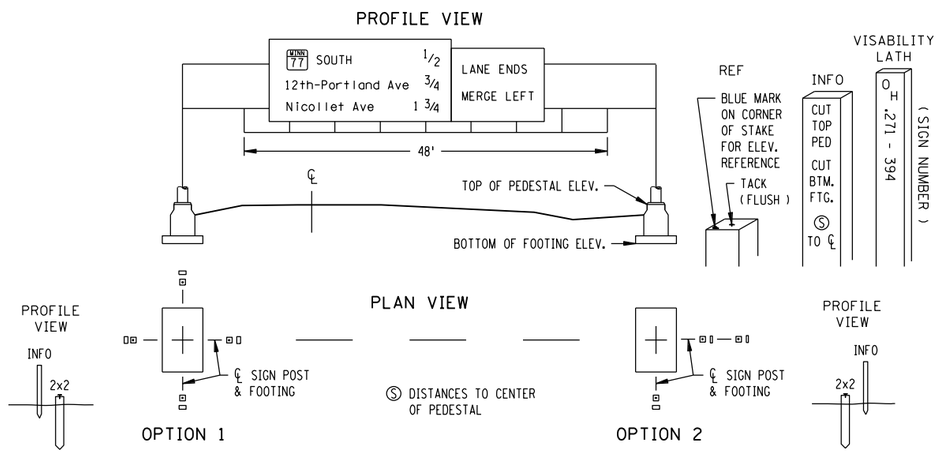


CLEAR & GRUBBING LIMITS (CLEAR) OR MUCK EXCAVATION LIMITS (MUCK)

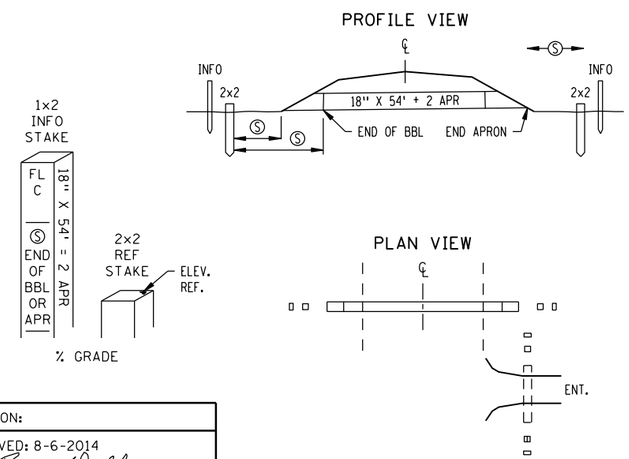


NOTE: FRONT OF LATH GOES TOWARD ℄

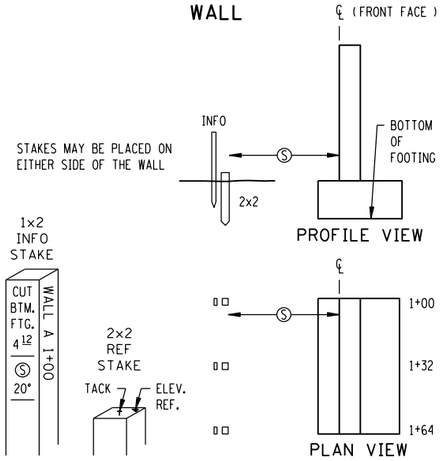
OVERHEAD SIGNS (SIGN)



CULVERT

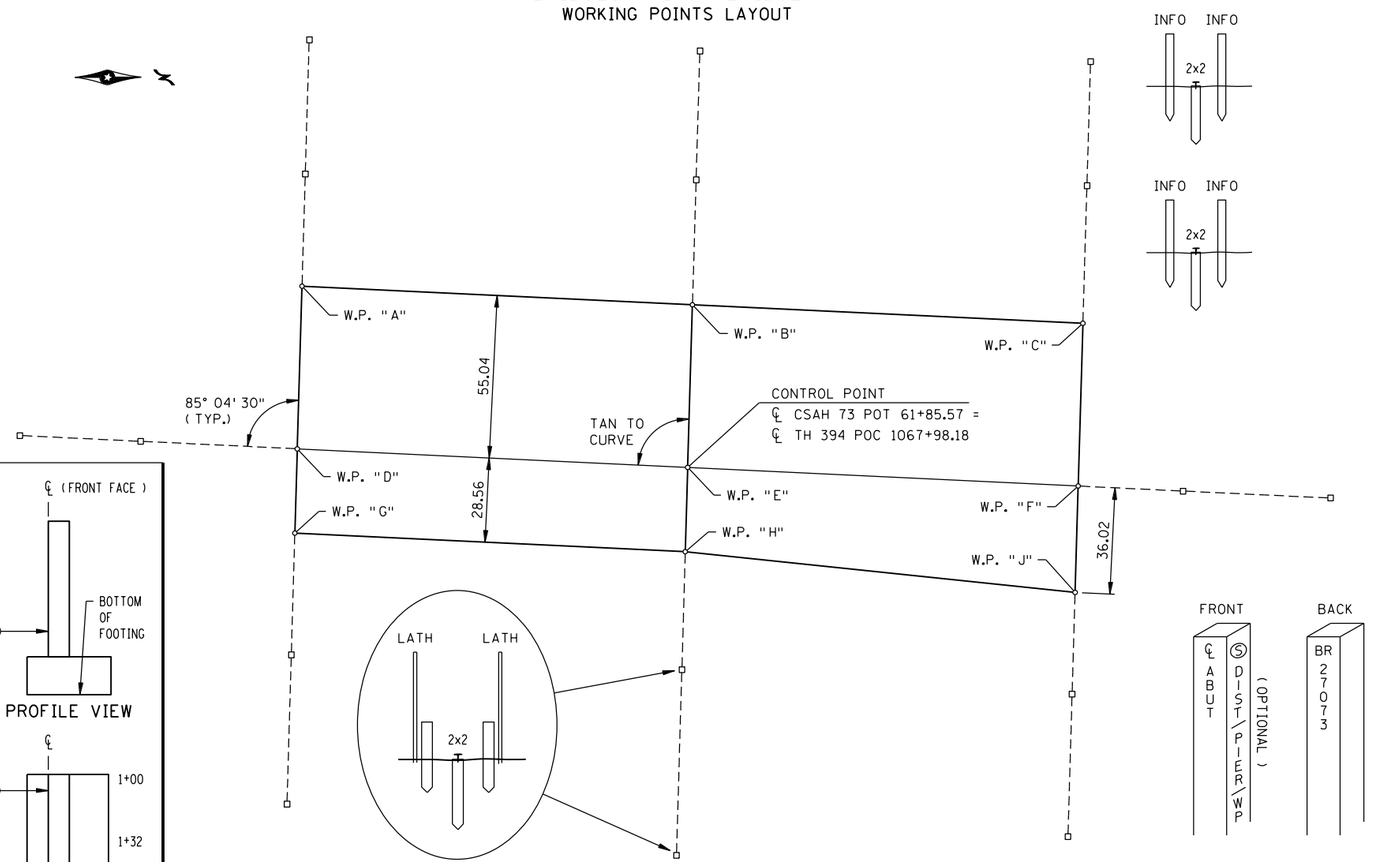


WALL



BRIDGESTAKING (BRIDGE)

WORKING POINTS LAYOUT



REVISION:

APPROVED: 8-6-2014

DIRECTOR, OFFICE OF LAND MANAGEMENT

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.115 | **2 OF 2**

APPROVED: 8-6-2014

REVISED:

STATE DESIGN ENGINEER

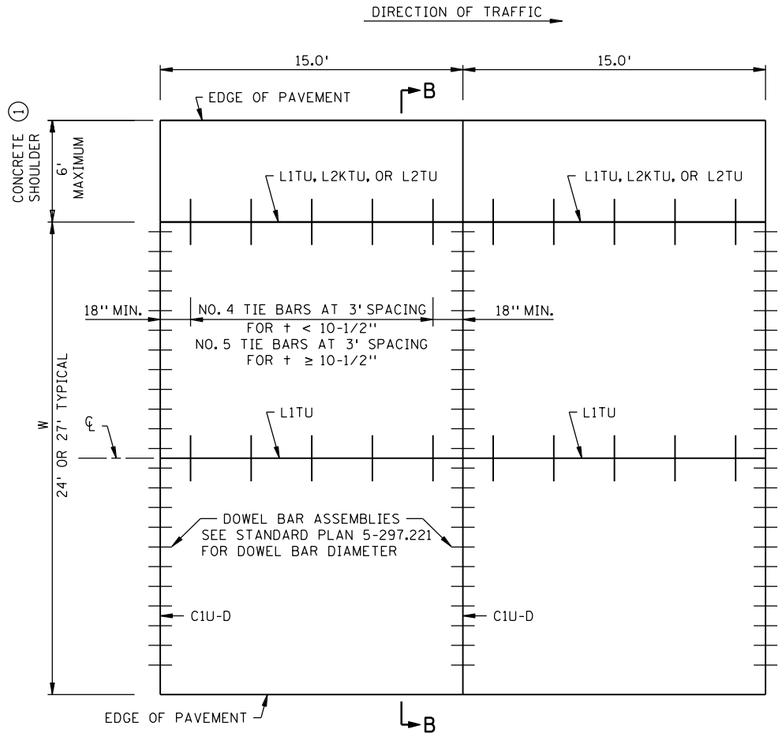
STAKING INFORMATION SHEET

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

S.P. NO. 4704-89 (T.H. 12)

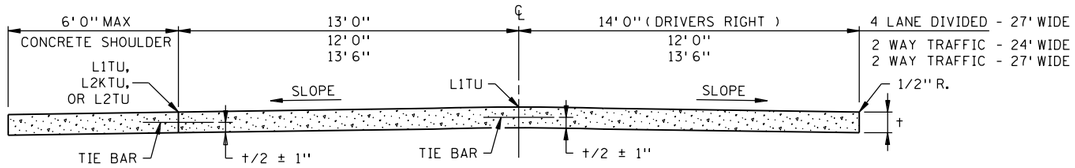
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MAINLINE PAVEMENT WITH
INSIDE CONCRETE SHOULDER

DOWELED



SECTION B-B

GENERAL NOTES:

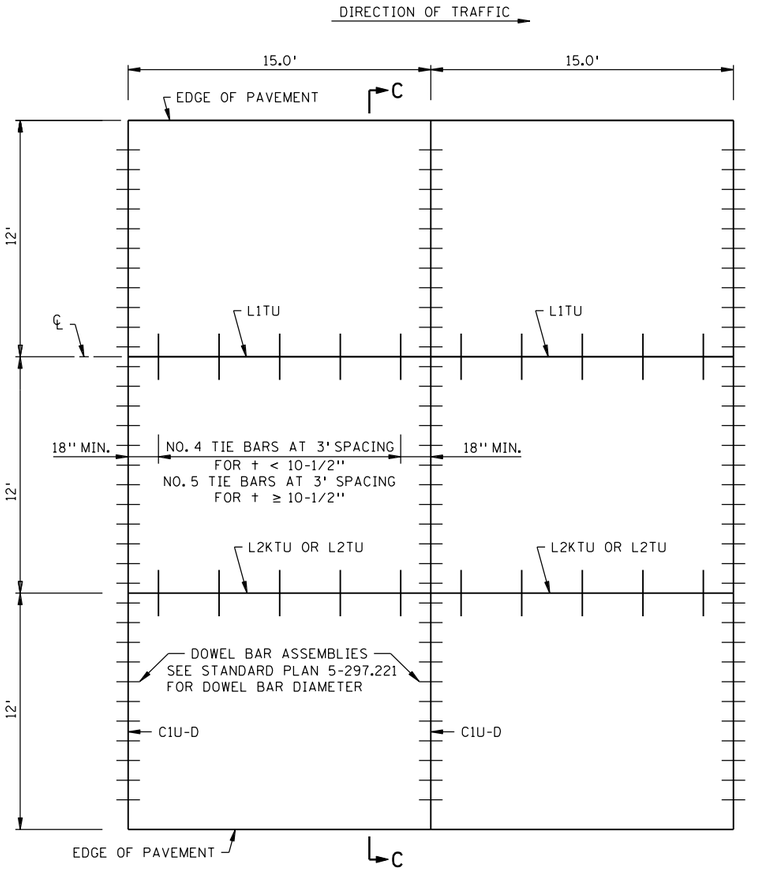
SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CROSS SLOPES AND PAVEMENT THICKNESS, t.

DOWEL BAR ASSEMBLIES, WHEN REQUIRED, SHALL BE SIMILAR TO THOSE SHOWN ON STANDARD PLATE 1103.

ALL REINFORCING BARS SHALL BE EPOXY COATED AND COMPLY WITH SPEC. 3301.

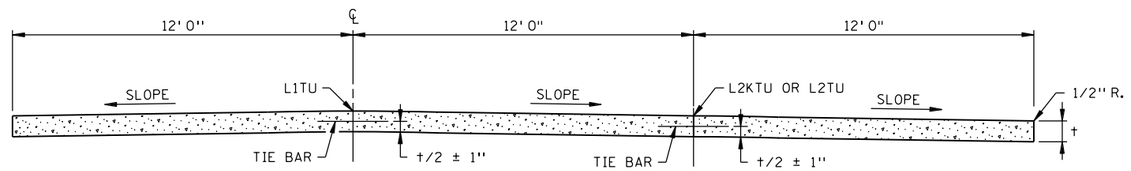
FOR SUPPLEMENTAL PAVEMENT REINFORCEMENT, SEE STANDARD PLATE 1070.

① CONTACT THE CONCRETE ENGINEER TO DISCUSS WHETHER TIE BARS AND SAWED JOINTS ARE NEEDED BASED ON CONCRETE SHOULDER WIDTH AND DEPTH.



MAINLINE PAVEMENT URBAN

DOWELED



SECTION C-C

REVISION:

APPROVED: FEBRUARY 16, 2016

DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.217 | 2 OF 2

APPROVED: 2-16-2016
REVISED:

STATE DESIGN ENGINEER

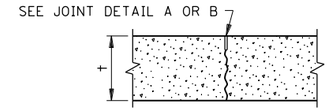
CONCRETE MAINLINE PAVEMENT
15.0 FT. PANEL LENGTH
URBAN OR CONCRETE SHOULDERS

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

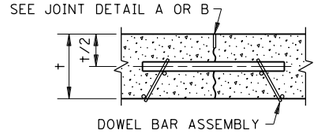
S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 32 OF 239 SHEETS

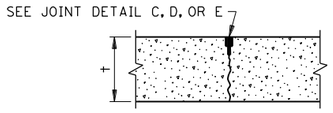
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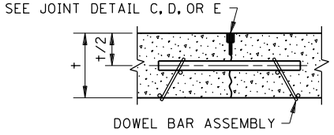
C1U & C2H



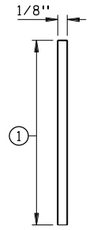
C1U-D & C2H-D



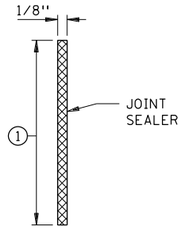
C3P, C4S, C5H



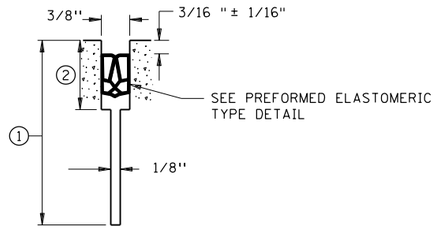
C3P-D, C4S-D, C5H-D



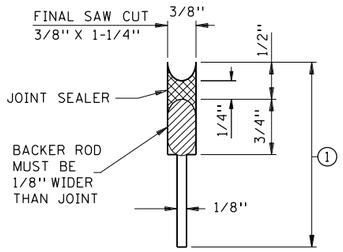
JOINT DETAIL A
SAWED & UNSEALED



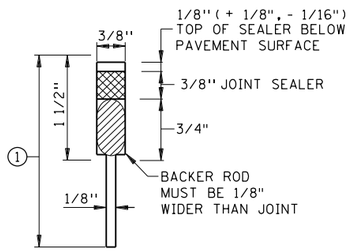
JOINT DETAIL B ③
SAWED & SEALED



JOINT DETAIL C ③
SAWED AND SEALED



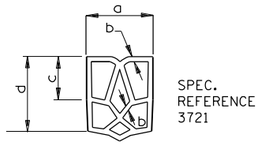
JOINT DETAIL D ③④
SAWED AND SEALED



JOINT DETAIL E ③⑤
SAWED AND SEALED

REQUIRED DIMENSIONS

JOINT TYPE	TRANSVERSE
NOMINAL SEALER SIZE	11/16" USE IN ALL 3/8" JOINTS
a	0.69" + 0.13" - 0.05"
b	0.08" ± 0.02"
c	0.25" MIN.
d	0.63" MIN.



SPEC. REFERENCE 3721

TYPICAL SHAPE FOR SATISFACTORY INSTALLATION IN JOINT (5 CELL MIN.)

PREFORMED ELASTOMERIC TYPE DETAIL

CONTRACTION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE

JOINT REFERENCE		JOINT DETAIL	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
C1U	C1U-D	A	UNSEALED	1/8"
C2H	C2H-D	B	3725	1/8"
C3P	C3P-D	C	3721	3/8"
C4S	C4S-D	D	3722	3/8"
C5H	C5H-D	E	3725	3/8"

LEGEND
C = CONTRACTION JOINT
NO. = JOINT REFERENCE
U = UNSEALED
H = HOT POURED
P = PREFORMED
S = SILICONE
-D = DOWEL BARS

EXAMPLE: C2H-D

DOWEL BAR DIAMETER TABLE

PAVEMENT THICKNESS †	DOWEL BAR DIAMETER
LESS THAN 6"	NONE
6" - 6 1/2"	1" OR NONE
7" - 7 1/2"	1"
8" - 10"	1 1/4"
10 1/2" AND GREATER	1 1/2"

NOTES:

SEE STANDARD PLATE 1103 FOR DOWEL BAR ASSEMBLY.

SEE STANDARD PLATE 1150 FOR CONSTRUCTION OF HEADER JOINTS.

JOINT WIDTH TOLERANCE IS + 1/16" TO - 1/32"

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

SEE STANDARD PLANS 5-297.217 AND 5-297.219, FOR CONCRETE MAINLINE/RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATION TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

① JOINT DEPTH SHALL BE:
FOR CONCRETE OVERLAYS - 1/3 THE PAVEMENT THICKNESS
FOR CONCRETE PAVEMENT - 1/4 THE PAVEMENT THICKNESS

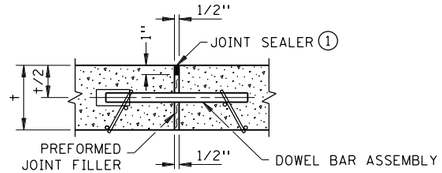
② SEE CONTRACTION JOINT SEALER DETAIL. WHEN USING PREFORMED JOINT SEALER, THE DEPTH SHALL BE 1/4" MORE THAN THE PREFORMED SEALER, WHEN COMPRESSED, TO FIT THE JOINT DESIGN WIDTH. "a" DIMENSION SHALL APPLY AT ANY POINT THROUGHOUT "c" DEPTH. SHARP INTERNAL CORNERS WILL NOT BE PERMITTED. ALL CORNERS SHALL BE PROVIDED WITH SUITABLE FILLET.

③ WHEN SEALING, THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING.

④ PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD SHALL BE PLACED SUCH THAT THE TOP OF THE BACKER ROD IS 1/2"BELOW THE SURFACE OF THE PAVEMENT. NON SELF-LEVELING SILICONE SHALL BE TOOLED INTO THE JOINT MAINTAINING A SEAL AND BEAD THICKNESS OF 1/4".

⑤ PRIOR TO SEALING THE JOINT, A 1/2" DIA. CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F. SHALL BE PLACED 1/2" BELOW THE TOP OF PAVEMENT.

CONTRACTION JOINTS
DESIGN C



E1H-D (W/DOWELS) E1H (W/O DOWELS)

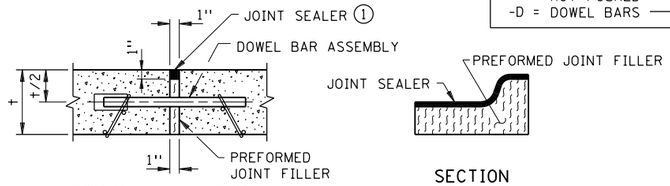
JOINT DETAIL A

EXPANSION JOINT REFERENCE, DETAIL & SEALER SPEC. TABLE

JOINT REFERENCE		JOINT DETAIL	JOINT SEALER SPEC.	JOINT WIDTH
WITHOUT DOWELS	WITH DOWELS			
E1H	E1H-D	A	3725	1/2"
E2H	E2H-D	B	3725	1"
E4H		C	3725	2"
	E4H-D	D	3725	2"
E8H		STANDARD PLAN 5-297.229	3725	4"

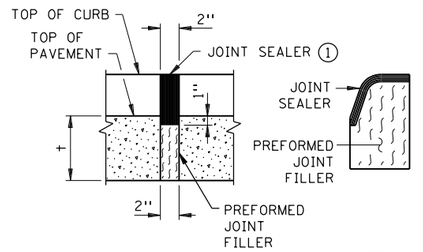
LEGEND
E = EXPANSION JOINT
NO. = JOINT REFERENCE
H = HOT POURED
-D = DOWEL BARS

EXAMPLE: E4H-D



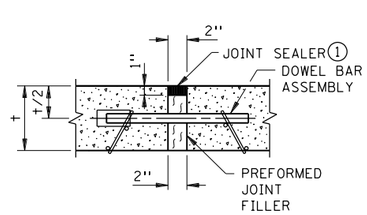
E2H-D (W/DOWELS) E2H (W/O DOWELS) SECTION THRU CURB

JOINT DETAIL B



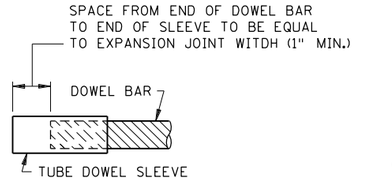
E4H (W/O DOWELS) SECTION THRU CURB

JOINT DETAIL C



E4H-D (W/DOWELS)

JOINT DETAIL D



DOWEL BAR SLEEVE DETAIL

NOTES:

PREFORMED JOINT FILLER MATERIAL, SPEC. 3702.

FOR DOWEL BAR ASSEMBLY, SEE STANDARD PLATE 1103.

① JOINT SEALER SPEC. 3725. THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. TOP OF SEALER, FLUSH TO 1/8" BELOW TOP OF PAVEMENT SURFACE. MAKE TOP OF SEALER FOR CURB SECTION D JOINTS FLUSH WITH SURFACE ±1/8".

REVISION:

APPROVED: 8-6-2014
DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.221 | 1 OF 2

APPROVED: 8-6-2014
REVISED:

STATE DESIGN ENGINEER

PAVEMENT JOINTS

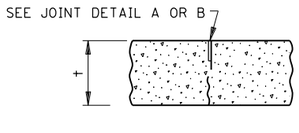
CONTRACTION (DESIGN C) AND EXPANSION (DESIGN E)

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

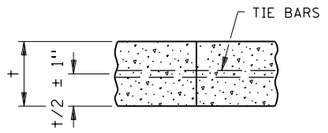
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SHEET NO. 33 OF 239 SHEETS

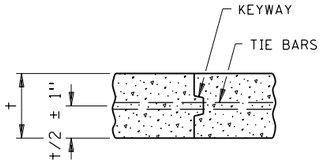
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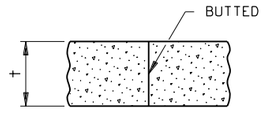
L1U & L1H ①



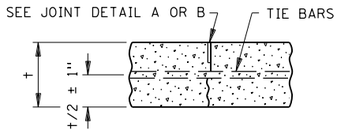
L2TU ②



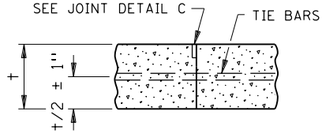
L2KTU ③



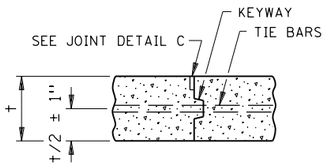
L3U



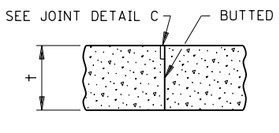
L1TU & L1TH ①



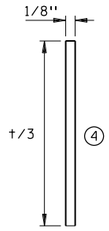
L2TH ②



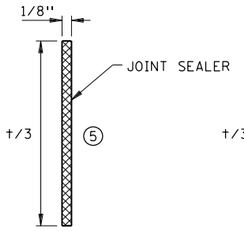
L2KTH ③



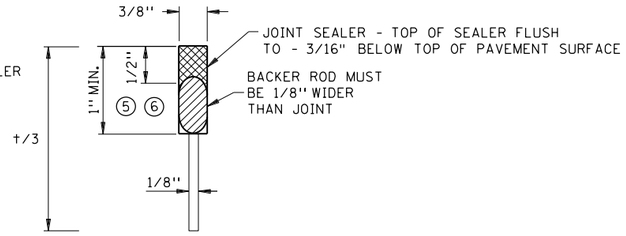
L3H



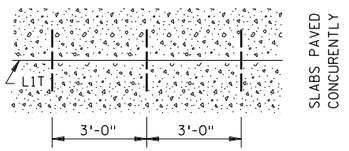
JOINT DETAIL A
SAWED & UNSEALED



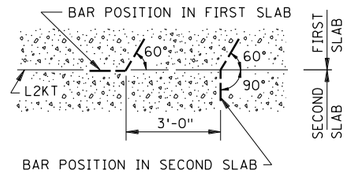
JOINT DETAIL B
SAWED & SEALED



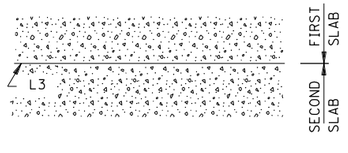
JOINT DETAIL C
SAWED & SEALED



L1T PAVING DETAIL



L2T & L2KT TIE BAR BENDING
AND PAVING DETAIL



L3 PAVING DETAIL

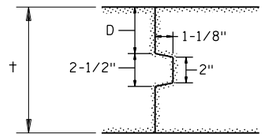
TIEBAR TABLE

PAVEMENT THICKNESS	TIEBAR SIZE	LENGTH
< 10-1/2"	NO. 4	30"
≥ 10-1/2"	NO. 5	36"
ALL THICKNESS WHEN TYING TO CURB AND GUTTER	NO. 4	30"

THE TIE BAR SPACING FOR ALL L2T AND L2KT JOINTS SHALL BE 3'-0" CENTER TO CENTER AND BENT 60° AS SHOWN, EXCEPT WHEN NOTED OTHERWISE IN THE PLANS.

TIE BARS IN THE L2T AND L2KT JOINTS SHALL BE THE SAME SIZE AND LENGTH AS USED FOR THE L1T JOINTS, WHEN TYING PAVEMENT TO PAVEMENT. TIE BARS IN THE L2KT JOINTS SHALL BE NO. 4 X 2' - 6", WHEN TYING CURB & GUTTER TO PAVEMENT.

ALL TIE BARS SHALL BE EPOXY COATED AND COMPLY WITH SPEC. 3301.



PAVEMENT KEYWAY DETAIL

KEYWAY DIMENSION TABLE

t PAVEMENT THICKNESS	D (TOLERANCE ± 1/4")
< 7"	NO KEYWAY
7" TO 7-1/2"	3"
8" TO 10"	4"
≥ 10-1/2"	5"

KEYWAY (1-1/8" x 2" x 2-1/2") MAY BE FORMED WITH MOLD OR METAL FORM. OTHER APPROVED KEYWAY SHAPES GIVING EQUIVALENT CONSTRUCTION FEATURES MAY BE USED WITH APPROVAL OF THE ENGINEER.

LONGITUDINAL JOINT REFERENCE, DETAIL & SEALER SPECIFICATION TABLE

JOINT REFERENCE			JOINT DETAIL	JOINT SEALER SPEC	JOINT WIDTH
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS			
L1U	L1TU		A	UNSEALED	1/8"
L1H	L1TH		B	3725	1/8"
	L2TU	L2KTU	NONE	UNSEALED	
	L2TH	L2KTH	C	3725	3/8"
L3U			NONE	UNSEALED	
L3H			C	3725	3/8"

LEGEND

L = LONGITUDINAL JOINT
NO. = JOINT REFERENCE
1 = PAVED CONSTRUCTION JOINT
2 = TIED/KEYED CONSTRUCTION JOINT
3 = BUTTED CONSTRUCTION JOINT
K = KEYWAY
T = TIE BARS
U = UNSEALED
H = HOT POURED

EXAMPLE: L2KTH

NOTES:

NORMALLY, TIED PAVEMENT WIDTHS SHALL NOT EXCEED FOUR LANES, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.

JOINT WIDTH TOLERANCE IS + 1/16 IN. TO - 1/32 IN.

FURNISH AND INSTALL ALL JOINT SEALER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

TIED/KEYED AND BUTTED CONSTRUCTION JOINTS SHALL BE UNSEALED EXCEPT AS OTHERWISE NOTED IN THE PLAN OR REQUIRED BY THE ENGINEER.

SEE STANDARD PLANS 5-297.217 AND 5-297.219 FOR CONCRETE MAINLINE AND RAMP PAVEMENT.

SEE PAVING LAYOUTS IN THE PLANS FOR JOINT CLASS DESIGNATIONS TO BE USED AND SPECIAL REINFORCEMENT REQUIRED.

WHEN CURB AND GUTTER IS PLACED ADJACENT TO CONCRETE MAINLINE, THE TIEBARS SHALL BE PLACED A MINIMUM OF 2" ABOVE THE CURB AND GUTTER GRADE.

① SEE THE LONGITUDINAL JOINT REFERENCE, DETAIL & SEALER SPECIFICATION TABLE TO DETERMINE JOINT DETAIL.

② CONCRETE PAVEMENTS LESS THAN 7" SHALL USE L2TU AND L2TH JOINTS UNLESS OTHERWISE ALLOWED BY THE ENGINEER.

③ CONCRETE PAVEMENTS GREATER THAN OR EQUAL TO 7" SHALL USE L2KTU AND L2KTH JOINTS UNLESS OTHERWISE ALLOWED BY THE ENGINEER.

④ THE JOINT FACES SHALL BE CLEANED WITH WATER DURING THE SAW CUTTING OPERATION OR BY WATER BLASTING AFTER SAWING.

⑤ THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING.

⑥ PRIOR TO SEALING THE JOINT, A 1/2" DIAMETER CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F. SHALL BE PLACED 1/2" BELOW THE TOP OF THE PAVEMENT.

REVISION:

APPROVED: 8-6-2014
DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.221 | 2 OF 2

APPROVED: 8-6-2014
REVISED:
STATE DESIGN ENGINEER

PAVEMENT JOINTS

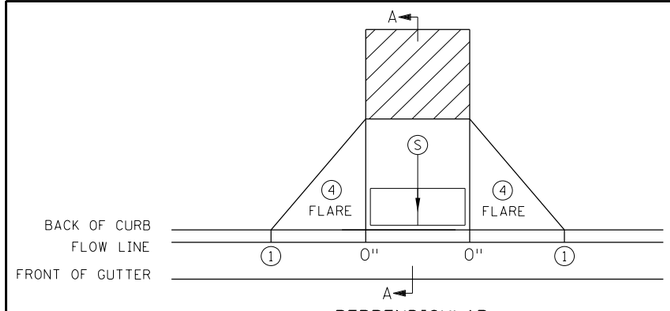
LONGITUDINAL (DESIGN L)

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

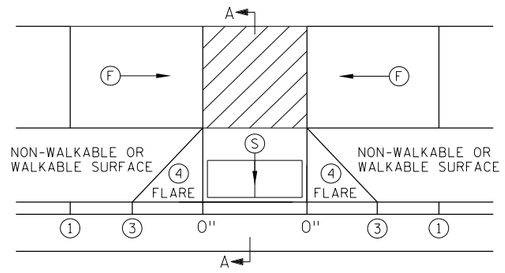
S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 34 OF 239 SHEETS

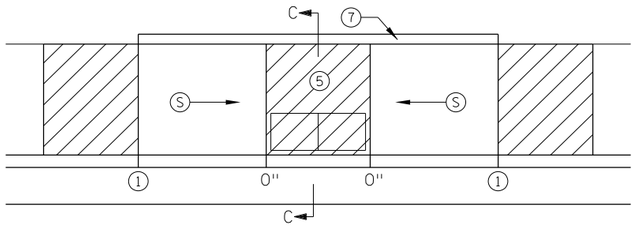
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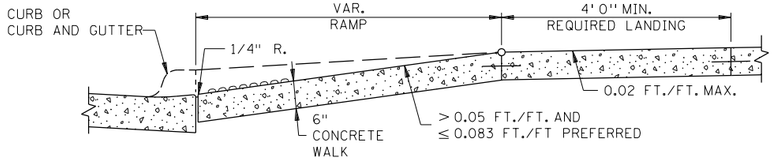
PERPENDICULAR



TIERED PERPENDICULAR

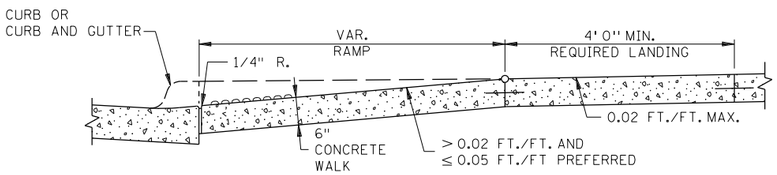


PARALLEL



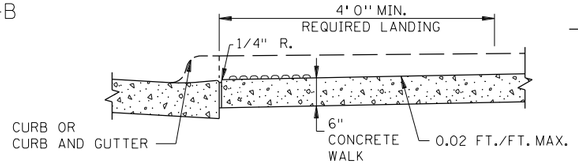
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



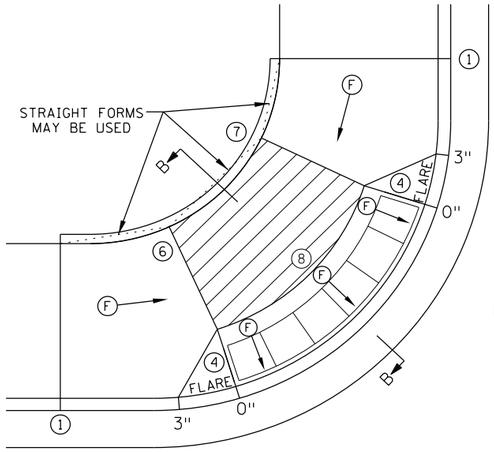
SECTION B-B

FAN

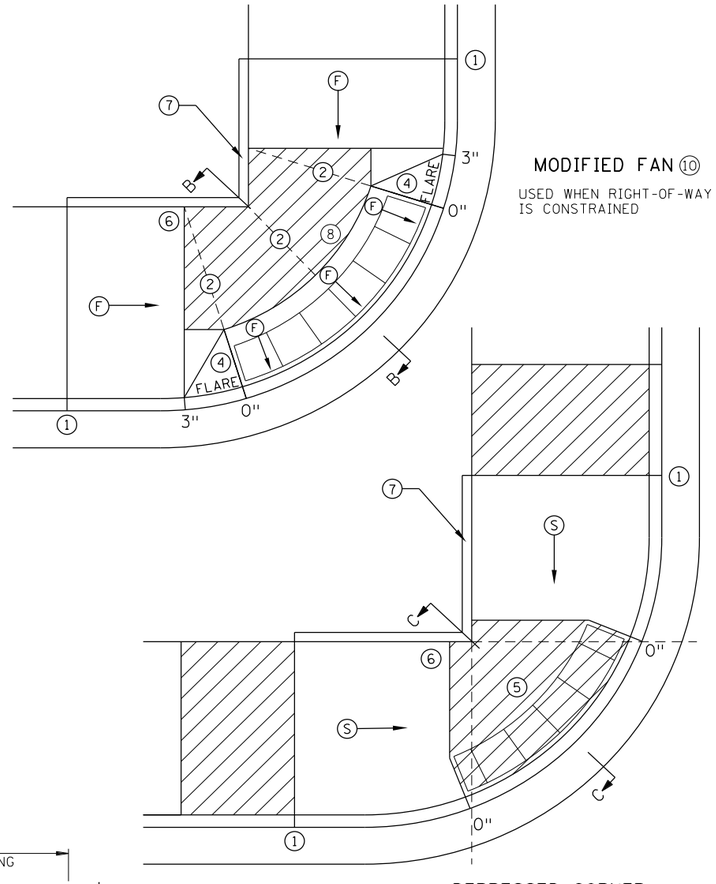


SECTION C-C

PARALLEL/DEPRESSED CORNER



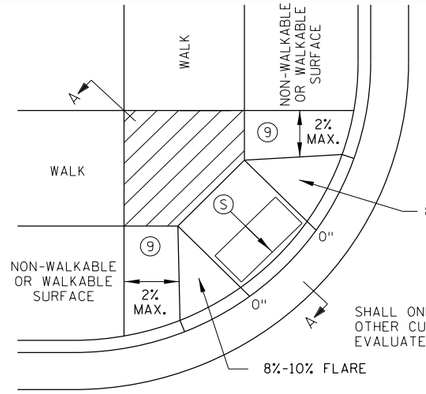
FAN⑩



MODIFIED FAN ⑩

USED WHEN RIGHT-OF-WAY IS CONSTRAINED

DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISIONS - PROSECUTION OF WORK (ADA).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER ENTIRE WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/TRAIL WIDTH. ARC LENGTH OF RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

① MATCH FULL HEIGHT CURB.
② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.
⑤ DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
⑥ THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
⑦ WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
⑧ A 7' MIN TOP RADIUS GRADE BREAK REQUIRED TO BE CONSTRUCTIBLE.
⑨ PAVE FULL WALK WIDTH.
⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 1 OF 6

APPROVED: 1-23-2017
REVISED:

STATE DESIGN ENGINEER

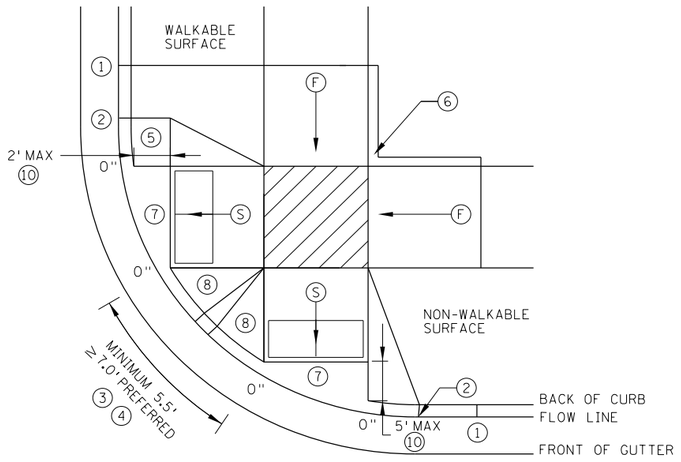
PEDESTRIAN CURB RAMP DETAILS

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

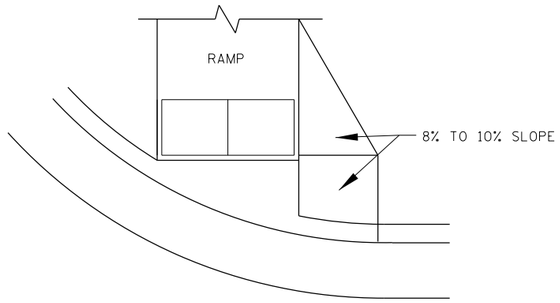
S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 35 OF 239 SHEETS

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COMBINED DIRECTIONAL ⑨



DIRECTIONAL RAMP WALKABLE FLARE

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER ENTIRE WIDTH OF SHARED-USE PATH AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/PATH WIDTH. ARC LENGTH OF RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHOULD BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

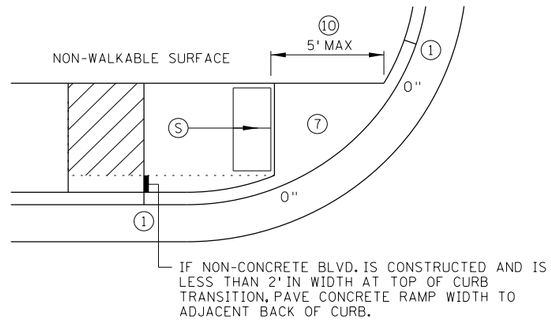
⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

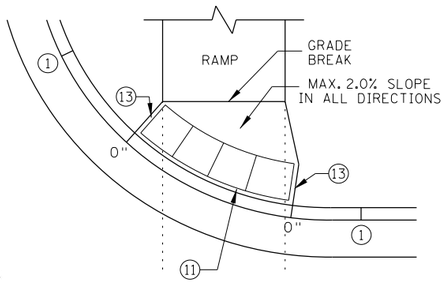
⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

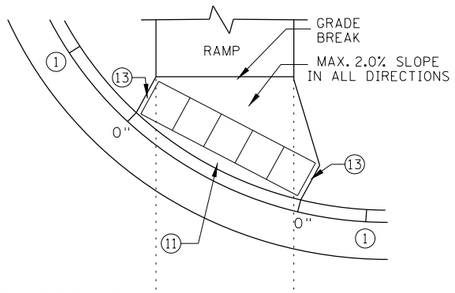


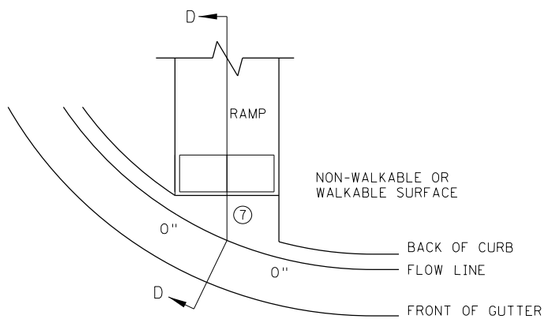
STANDARD ONE-WAY DIRECTIONAL ⑨



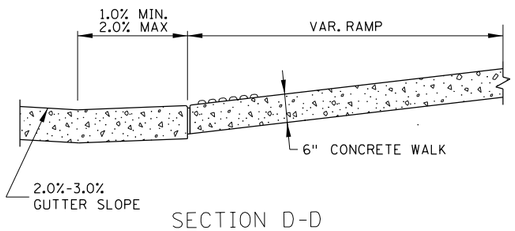
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

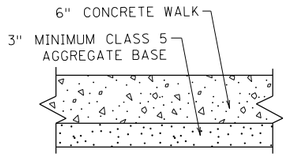




CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

LEGEND	
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.	
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
(F)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
X"	CURB HEIGHT

REVISION:

APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 2 OF 6

APPROVED: 1-23-2017
REVISED:

STATE DESIGN ENGINEER

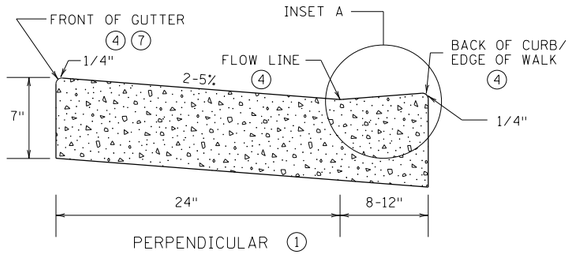
PEDESTRIAN CURB RAMP DETAILS

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

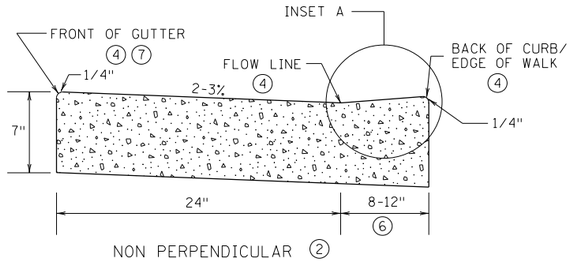
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SHEET NO. 36 OF 239 SHEETS

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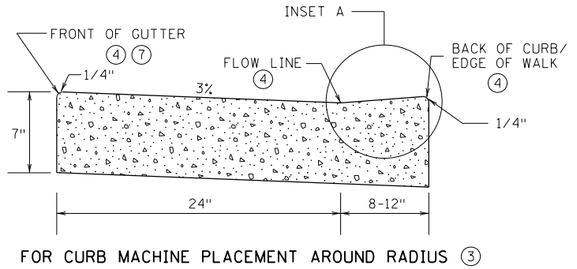


PERPENDICULAR (1)

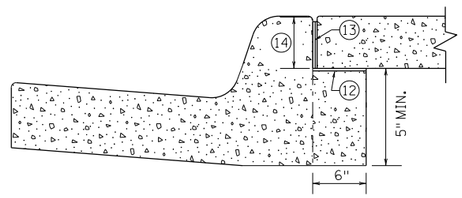


NON PERPENDICULAR (2)

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

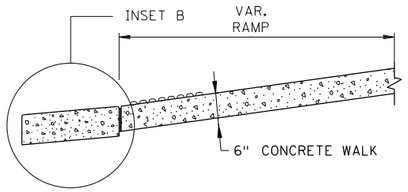


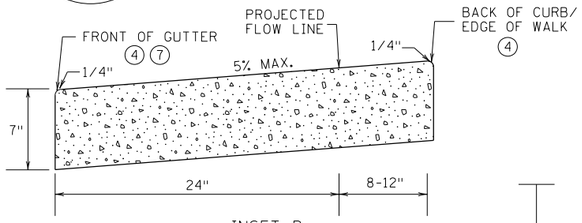
FOR CURB MACHINE PLACEMENT AROUND RADIUS (3)
(REGARDLESS OF RAMP TYPE)



OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

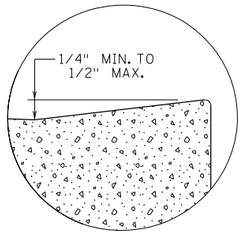
CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



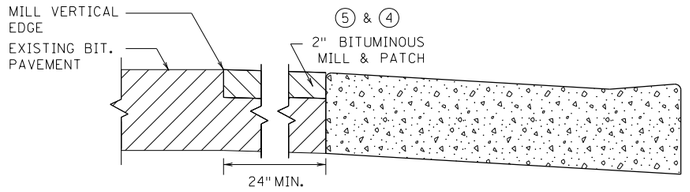


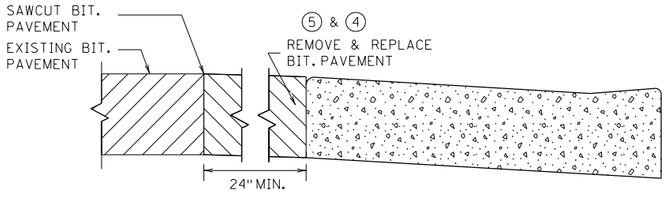
INSET B

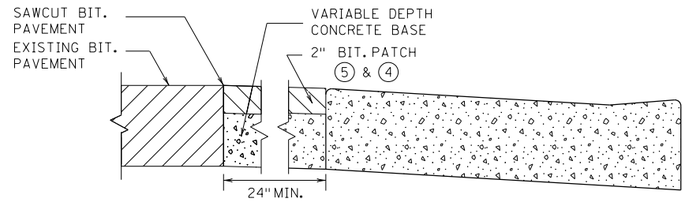
OUTFLOW GUTTER (8)



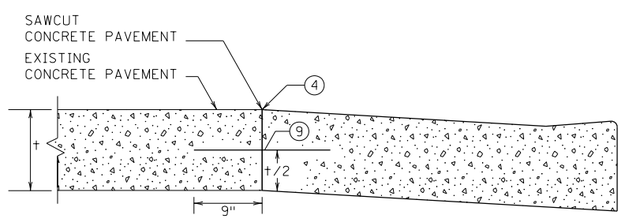
INSET A





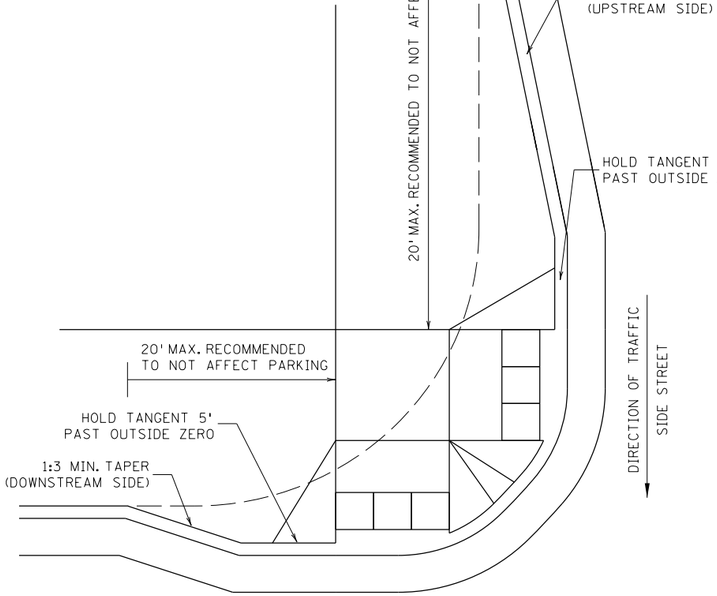


ONLY ALLOWED PER ENGINEER'S APPROVAL



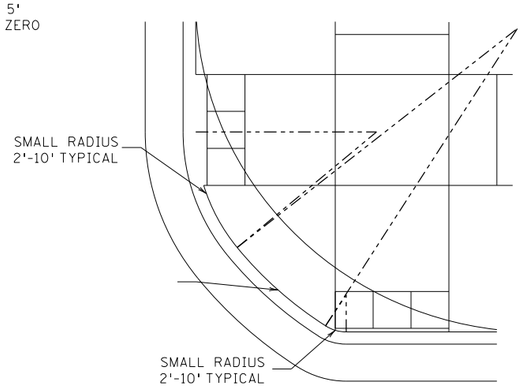
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) (11)

DIRECTION OF TRAFFIC
MAIN STREET



COMBINED DIRECTIONAL (10)
(COMPOUND RADIUS)

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

(1) FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

(2) FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.

(3) BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.

(4) THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

(5) ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

(6) VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.

(7) TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.

(8) SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.

(9) DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.

(10) HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.

(11) CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

(12) PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.

(13) 1/2" PREFORMED JOINT FILLER PER MNDOT SPEC. 3702.

(14) DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250 | 3 OF 6

APPROVED: 1-23-2017
REVISED:

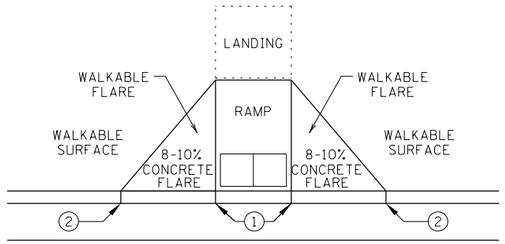
PEDESTRIAN CURB RAMP DETAILS

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S.A.P. 135-010-009

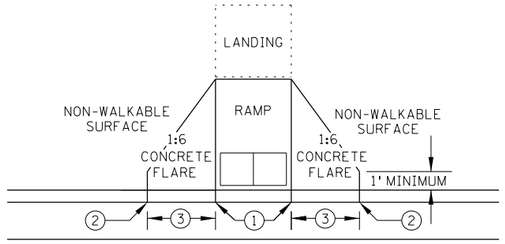
S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 37 OF 239 SHEETS

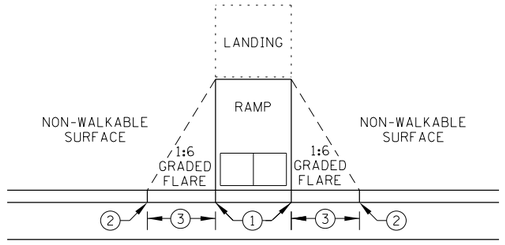
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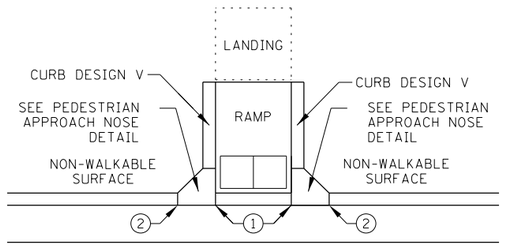
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

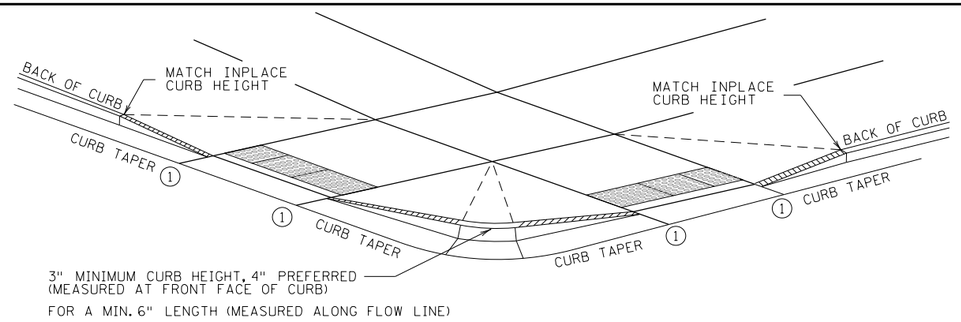


GRADED FLARES

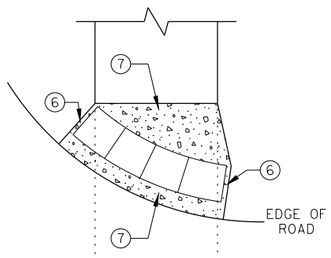


RETURNED CURB ⑤

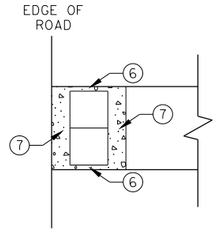
TYPICAL SIDE TREATMENT OPTIONS ④ ⑪



DETECTABLE EDGE WITH ⑧
CURB AND GUTTER

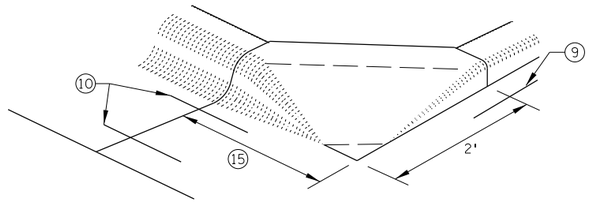


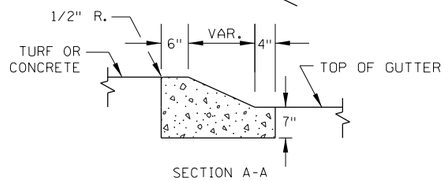
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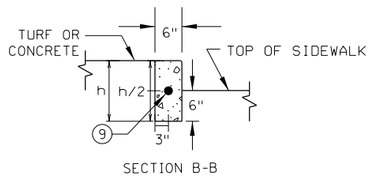
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

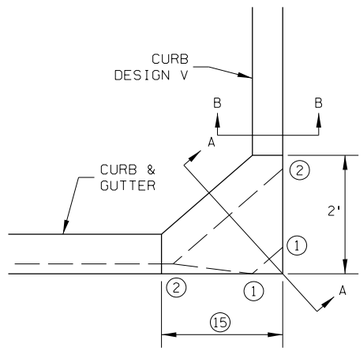




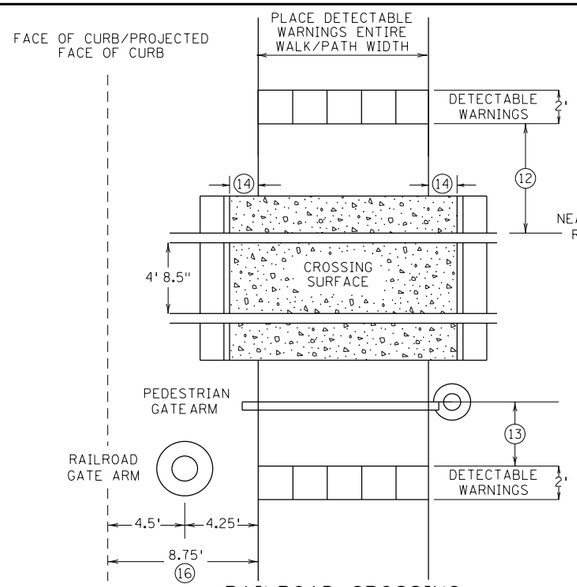
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT.

② FULL CURB HEIGHT.

③ 2' FOR 4" HIGH CURB AND 3' FOR 6" HIGH CURB.

④ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

⑤ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑥ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑦ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑧ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑨ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑩ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑪ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE.

⑫ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑬ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑫.

⑭ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑮ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

⑯ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

REVISION:

APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 4 OF 6

APPROVED: 1-23-2017
REVISED:

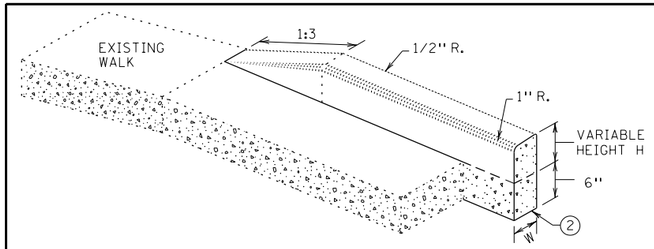
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

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S.A.P. 135-010-009

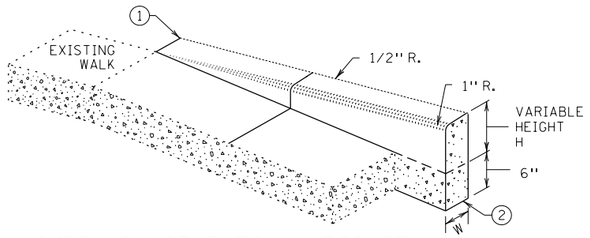
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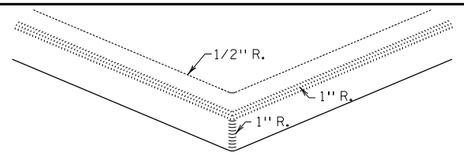
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS

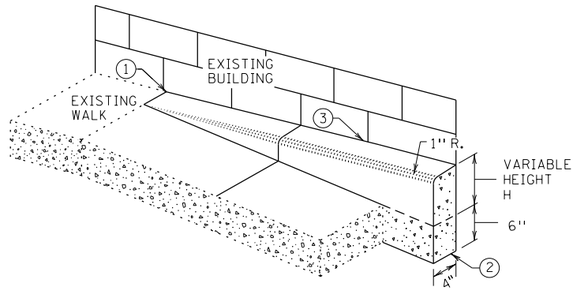


V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

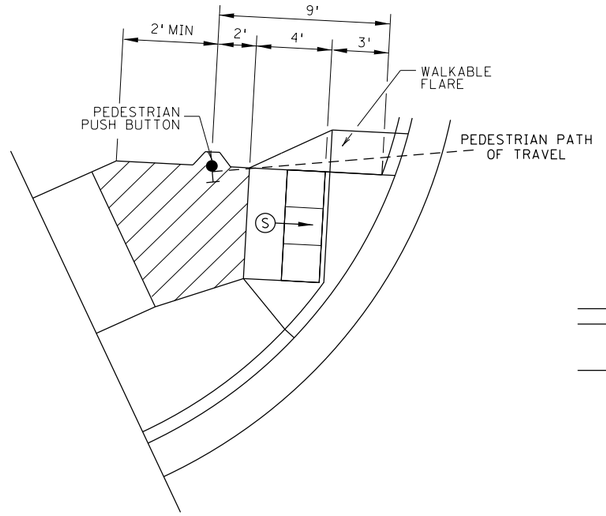


V CURB INTERSECTION



V CURB ADJACENT TO BUILDING OR BARRIER

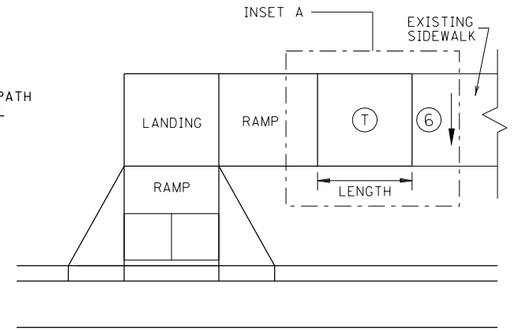
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"

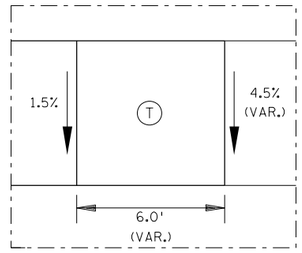


SEMI-DIRECTIONAL RAMP (3,4,9)

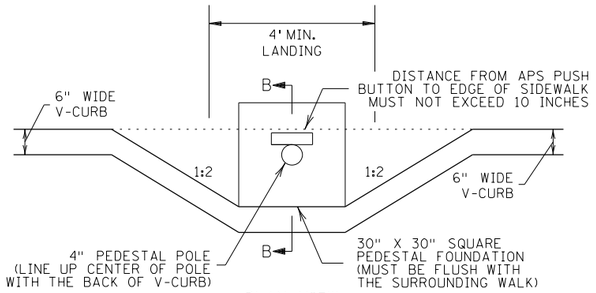
3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)

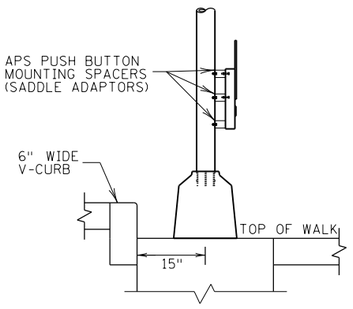




TRANSITION PANEL ④⑤

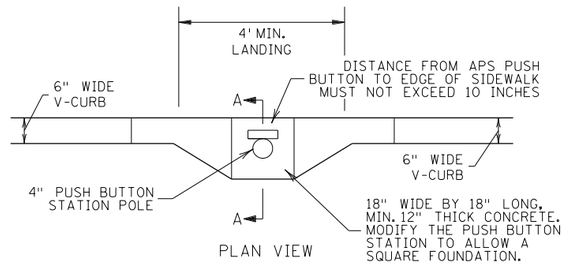


PLAN VIEW

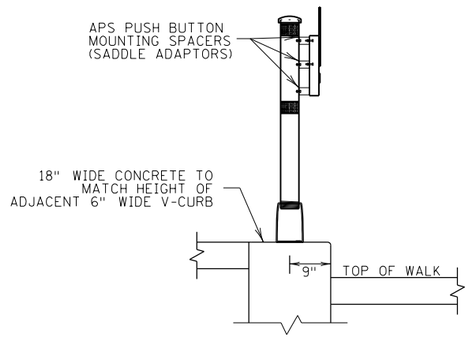


SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



PLAN VIEW



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

(1) END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

(2) ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

(3) EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.

(4) THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

(5) TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

(6) EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

(T) TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 5 OF 6

APPROVED: 1-23-2017

REVISED:

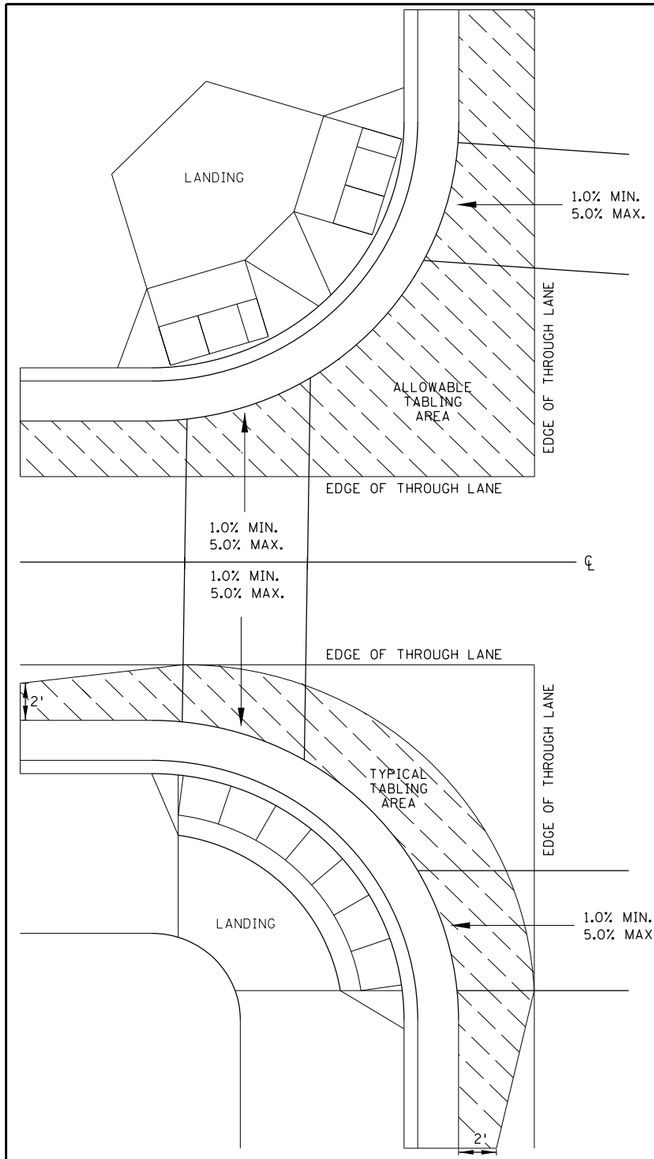
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

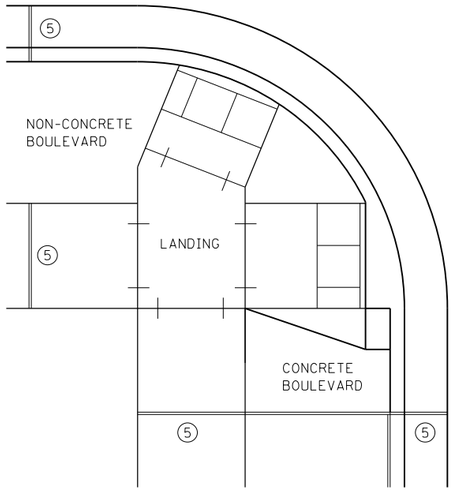
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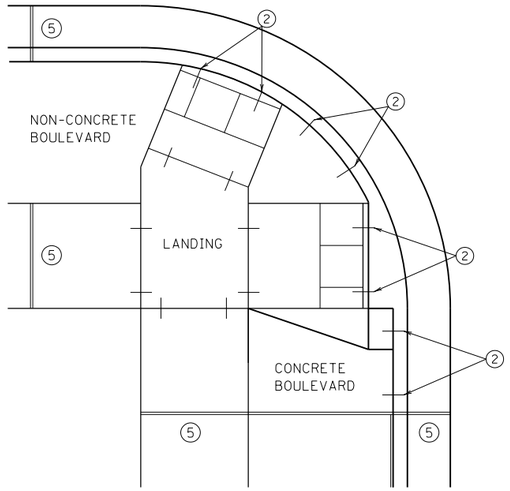
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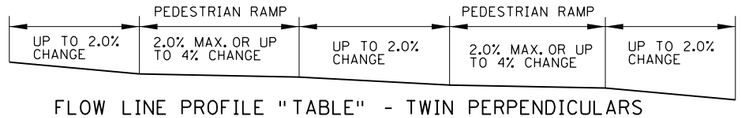
CURB LINE AND ROAD CROSSING ADJUSTMENTS



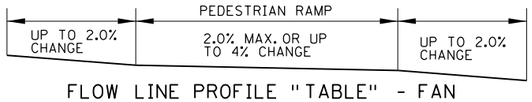
EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS



OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS ④



FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



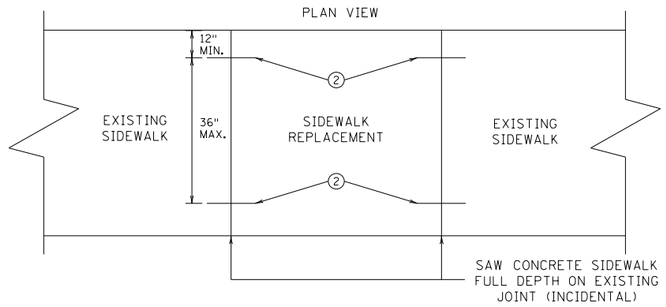
FLOW LINE PROFILE "TABLE" - FAN



FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

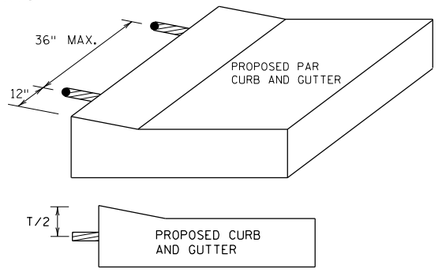


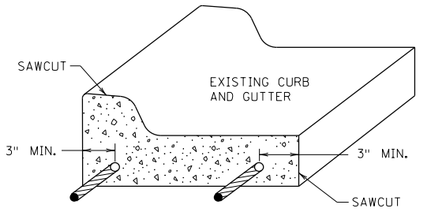
FLOW LINE PROFILE RAISE - FAN



OPTIONAL SIDEWALK REINFORCEMENT

SIDEWALK REINFORCEMENT TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.

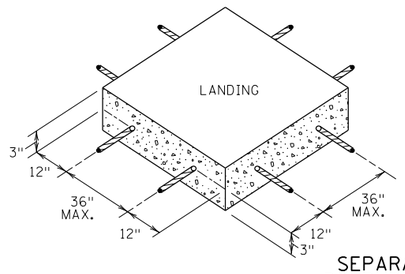


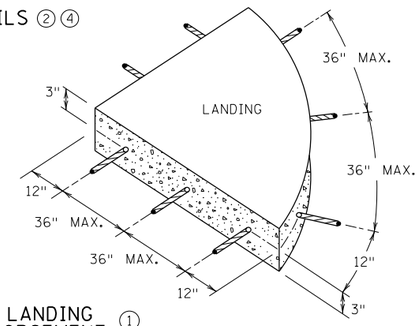


FOR USE ON CURB RAMP RETROFITS

CURB AND GUTTER REINFORCEMENT ③

OPTIONAL CURB LINE REINFORCEMENT DETAILS ②④





SEPARATE LANDING POUR REINFORCEMENT ①

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
3) 5.0% RECOMMENDED MAX. FLOW LINE
4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

1. TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
2. DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAXIMUM CENTER TO CENTER (EPOXY COATED). BARS TO BE ADJUSTED TO MATCH RAMP GRADE.
3. DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS WITHIN RADIUS.
4. THIS OPTIONAL CURB LINE REINFORCEMENT DETAIL SHOULD ONLY BE USED ON BITUMINOUS ROADWAYS WHEN SPECIFIED IN THE PLAN.
5. 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MNDOT SPEC. 3702.

REVISION:

APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 6 OF 6

APPROVED: 1-23-2017
REVISED:
STATE DESIGN ENGINEER

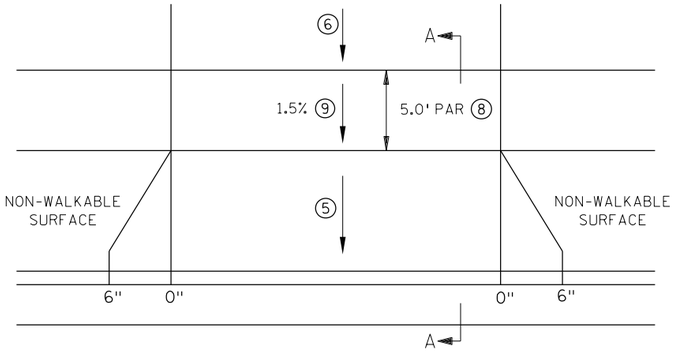
PEDESTRIAN CURB RAMP DETAILS

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S.A.P. 135-010-009

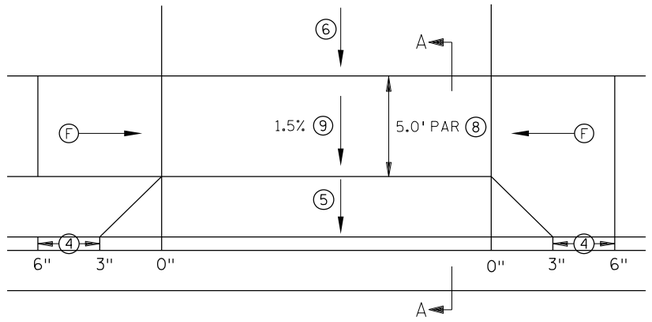
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SHEET NO. 40 OF 239 SHEETS

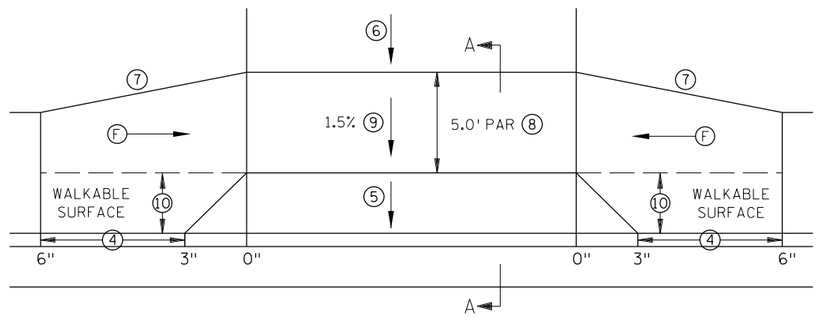
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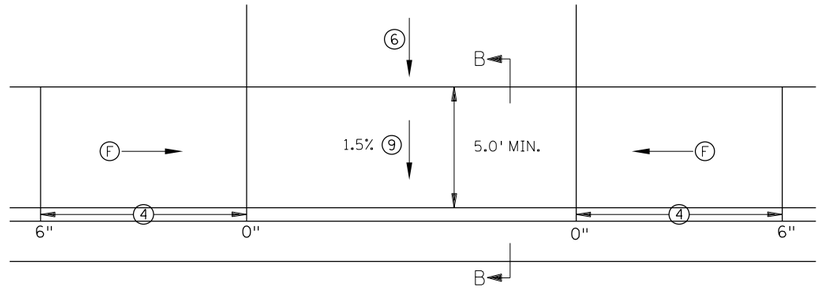
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR DRIVEWAY ②



TIERED PERPENDICULAR OFFSET DRIVEWAY



PARALLEL DRIVEWAY ③

NOTES:

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMPS FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

① TO BE USED WHEN THE DRIVEWAY PAR IS LEVEL WITH OR ABOVE THE TOP OF CURB, RESULTING IN A CONTINUOUS PAR PROFILE.

② TO BE USED WHEN THE DRIVEWAY PAR IS BELOW THE ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.

③ SHOULD BE USED FOR NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 CURB SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.

④ TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

⑤ 8% MAX. PREFERRED, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

⑥ 8% MAX. PREFERRED, SEE SHEET 2 FOR MORE INFORMATION.

⑦ 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.

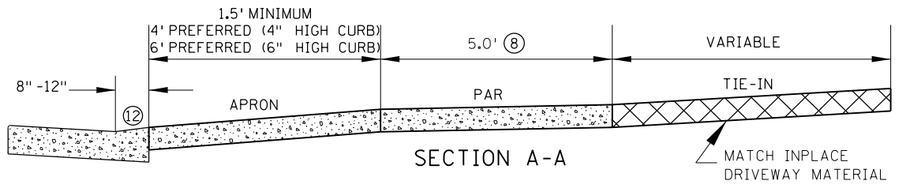
⑧ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.

⑨ THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

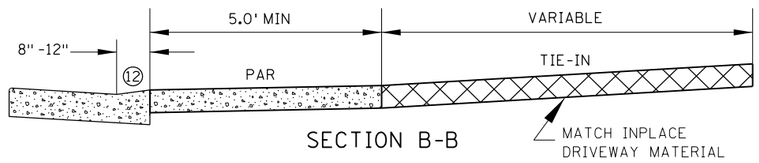
⑩ SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.

⑪ VALLEY GUTTER APRON TO BE POURED INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.

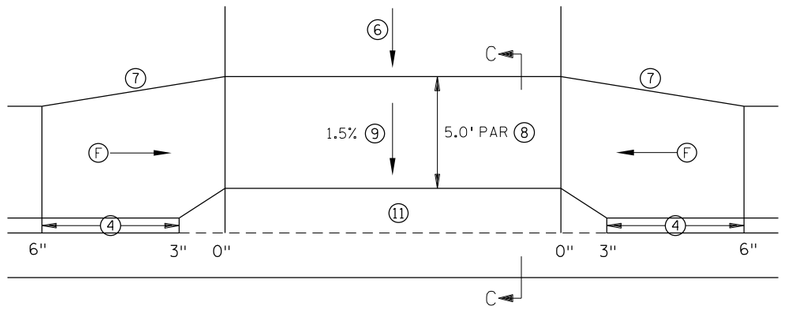
⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.



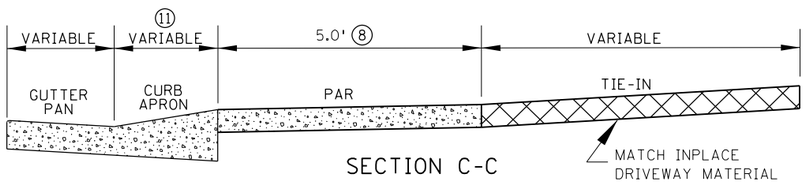
SECTION A-A



SECTION B-B



VALLEY GUTTER DRIVEWAY



SECTION C-C

LEGEND	
F	INDICATES DRIVEWAY RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
X"	CURB HEIGHT (INCHES)

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 | 1 OF 4

APPROVED: 1-23-2017
REVISED:

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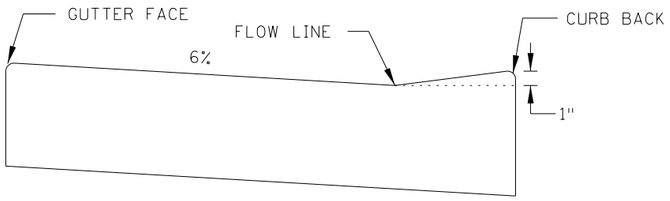
DRIVEWAY AND SIDEWALK DETAILS

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S.A.P. 135-010-009

S.P. NO. 4704-89 (T.H. 12)

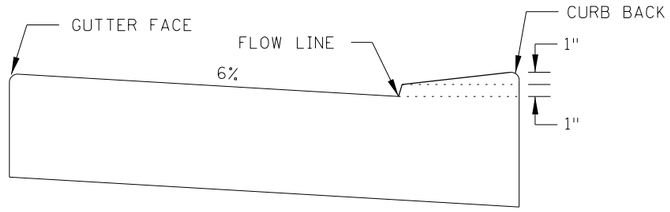
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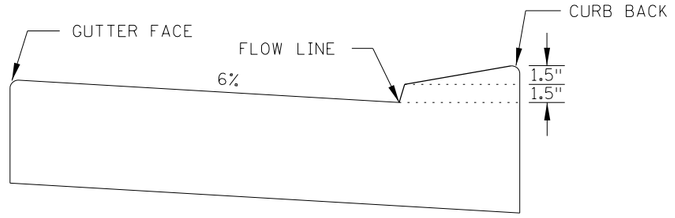
DW CURB STANDARD

STANDARD CURB AT DRIVEWAY



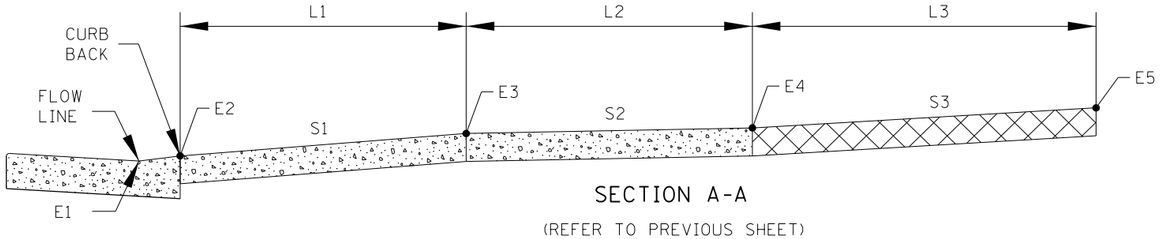
DW CURB TYPE 2

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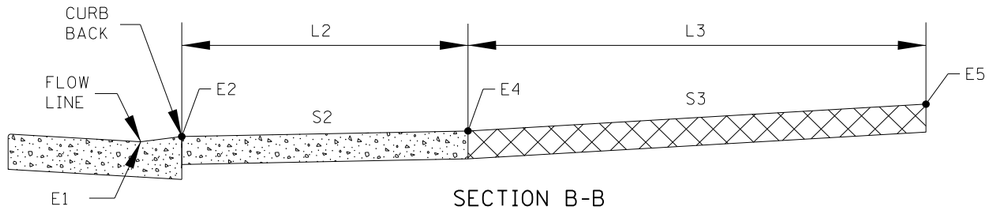
DW CURB TYPE 3

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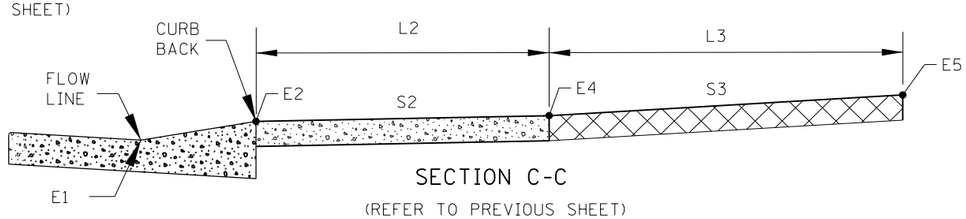
SECTION A-A

(REFER TO PREVIOUS SHEET)



SECTION B-B

(REFER TO PREVIOUS SHEET)

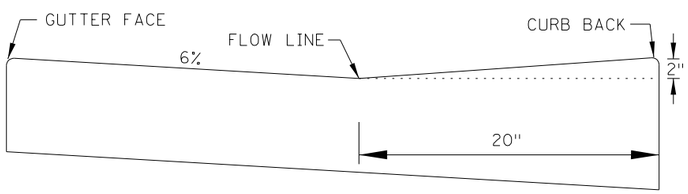


SECTION C-C

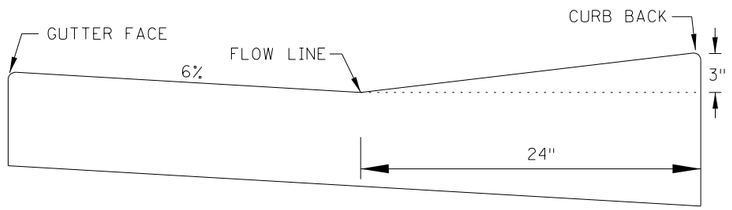
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DRIVEWAY TABULATION ①

STATION	SIDE	DRIVEWAY TYPE	CURB TYPE ③	E1	E2	L1 FT	S1 %	E3	L2 FT	S2 ② %	E4	L3 FT	S3 %	EXISTING %	E5	COMMENTS



VG 220



VG 324

VALLEY GUTTER CURB

OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED

NOTES:

DW CURB STANDARD SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB STANDARD SHOULD BE USED IF THERE IS ON STREET PARKING.

WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.

S1 8% MAX PREFERRED, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/ OR STEEPEN S3.

DW CURB TYPE 3 SHALL ONLY BE USED IN EXTREME TIE-IN CASES.

S3 8% MAX PREFERRED, IF THIS SLOPE IS EXCEEDED OR IS CONTINUED FOR MORE THAN 5' ANALYZE THE NEED FOR VERTICAL CURVE(S). SEE ROAD DESIGN MANUAL, CHAPTER 5, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

① EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY.

② SHOULD BE DESIGNED AT 1.5%.

③ DW CURB STANDARD SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPES 2 AND 3 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 | 2 OF 4

APPROVED: 1-23-2017

REVISED:

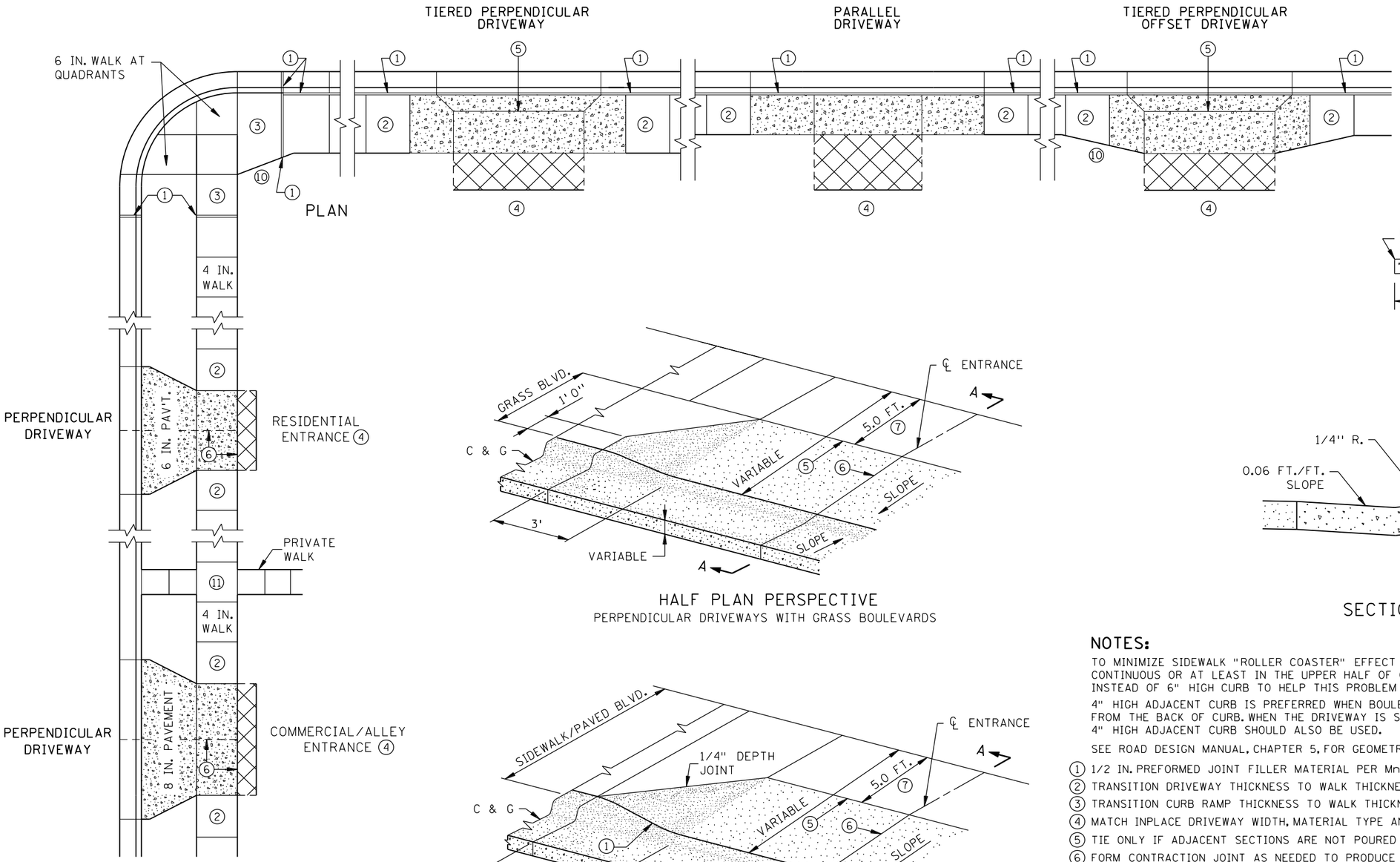
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DRIVEWAY AND SIDEWALK DETAILS

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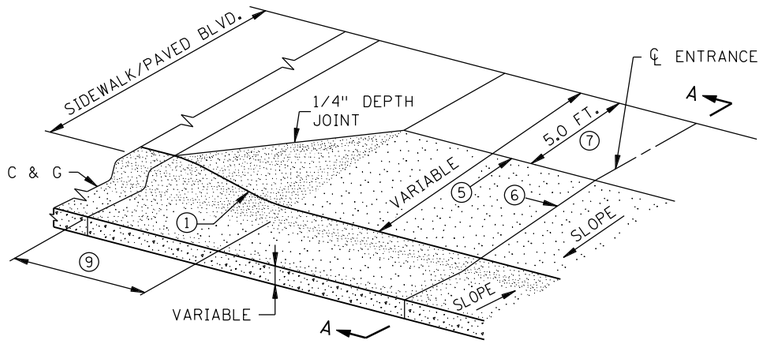
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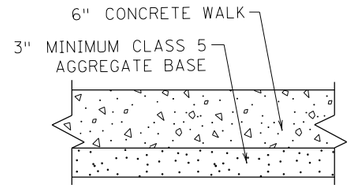
HALF PLAN PERSPECTIVE

PERPENDICULAR DRIVEWAYS WITH GRASS BOULEVARDS

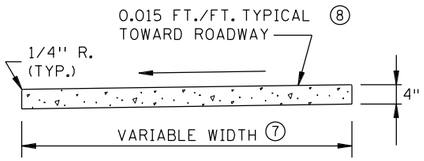


HALF PLAN PERSPECTIVE

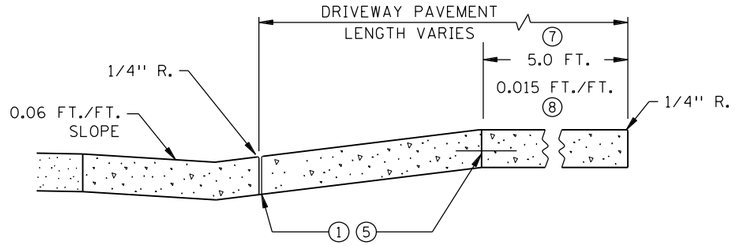
PERPENDICULAR DRIVEWAYS WITH CONCRETE BOULEVARDS AND ALL TIERED DRIVEWAYS



SECTION THRU CURB RAMP



SECTION THRU WALK



SECTION A-A

SECTION THRU DRIVEWAY

NOTES:

TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.

4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.

SEE ROAD DESIGN MANUAL, CHAPTER 5, FOR GEOMETRIC DESIGN OF DRIVEWAYS.

① 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MnDOT SPEC. 3702, EXCEPT AT GRASS BOULEVARDS.
② TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS.
③ TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.
④ MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.
⑤ TIE ONLY IF ADJACENT SECTIONS ARE NOT POURED MONOLITHICALLY. SEE SECTION A-A.
⑥ FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS (MAXIMUM WIDTH 15 FT. BETWEEN JOINTS).
⑦ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.
⑧ THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
⑨ 8% TO 10% FLARES SHALL BE USED WHEN ADJACENT TO WALKABLE SURFACES AND FOR ALL TIERED DRIVEWAYS WITH GRASS BOULEVARDS.
⑩ 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.
⑪ LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.

REVISION:

APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 | **3 OF 4**

APPROVED: 1-23-2017
REVISED:
STATE DESIGN ENGINEER

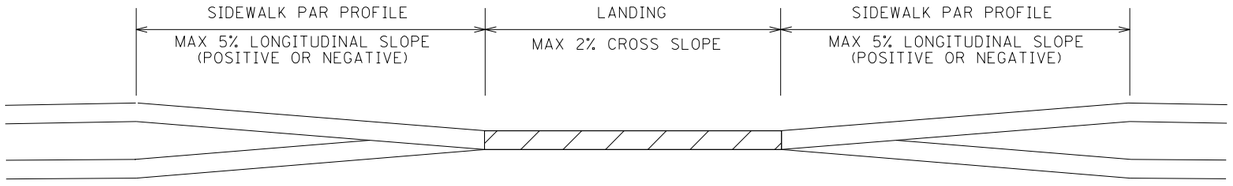
DRIVEWAY AND SIDEWALK DETAILS

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

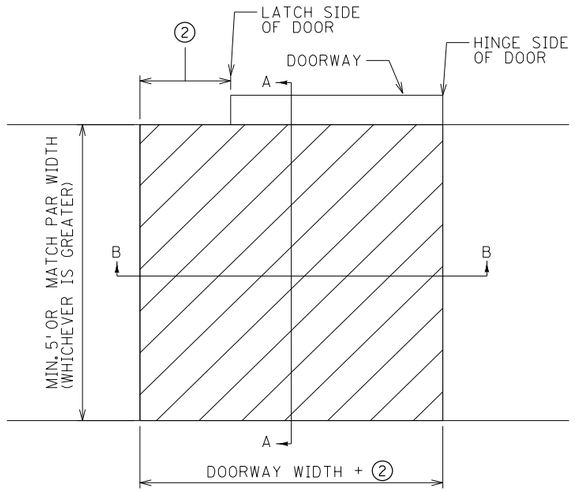
S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 43 OF 239 SHEETS

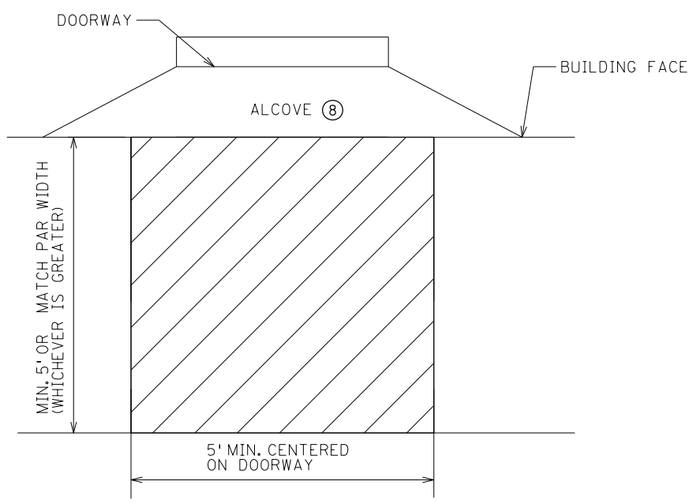
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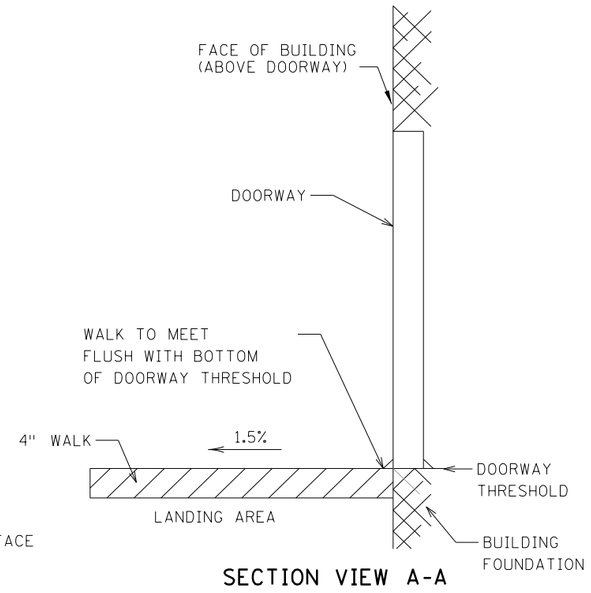
SECTION VIEW B-B



PLAN VIEW DOORWAY

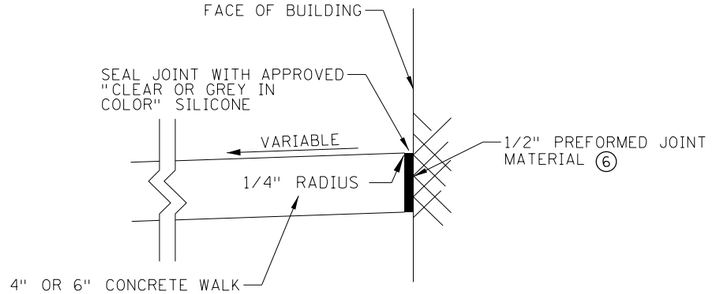


PLAN VIEW DOORWAY WITH ALCOVE

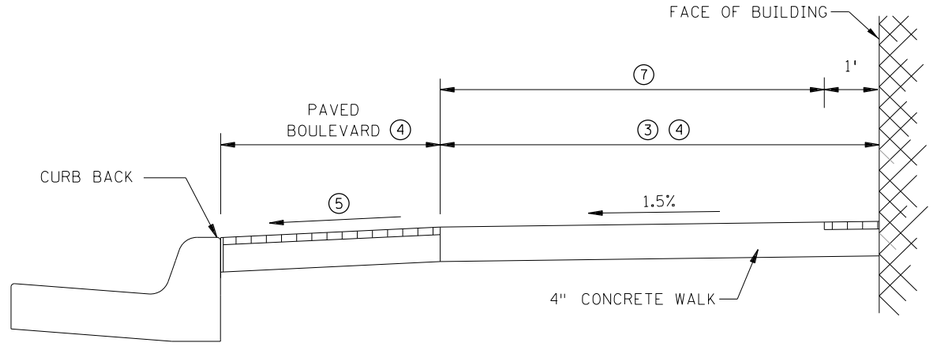


SECTION VIEW A-A

SIDEWALK LANDING REQUIREMENTS 1



BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION

NOTES:

FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.

SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.

SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.

1. LANDING CRITERIA IS REQUIRED FOR ALL DOORS, PRIVATE WALKS AND STEPS.
2. 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING.
   12" MIN WHEN DOOR SWINGS INWARD FROM BUILDING.
3. 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.
4. 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE.
5. 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS. 10% MAX. FOR SHORT SECTIONS ALLOWED TO ACCOUNT FOR FIELD TOLERANCES.
6. FURNISH AND INSTALL BACKER ROD OF APPROPRIATE DIAMETER.
7. TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHOULD BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.
8. 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.

LEGEND	
	LANDING - ALL SLOPES TO BE LESS THAN 2%
	OPTIONAL AESTHETIC TREATMENT

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.254 | 4 OF 4

APPROVED: 1-23-2017
REVISED:

STATE DESIGN ENGINEER

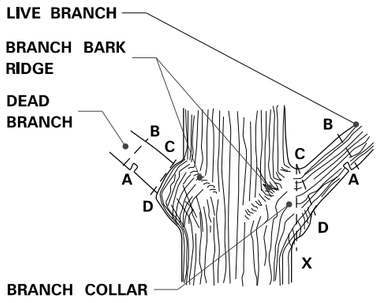
DRIVEWAY AND SIDEWALK DETAILS

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

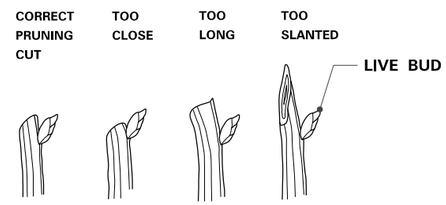
S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 44 OF 239 SHEETS

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BRANCHES PRUNED AT TRUNK
(SHIGO METHOD)



BRANCHES PRUNED TO LIVE BUD

STEPS TO PRUNING WITH PRUNING SAW:

1. CUT PART WAY THROUGH THE BRANCH AT POINT A.
2. CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.
3. AT BRANCH COLLAR CUT FROM POINT C TO D.

INCORRECT CUT FROM POINT C TO X (TOO CLOSE) WILL RESULT IN DISCONTINUOUS CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

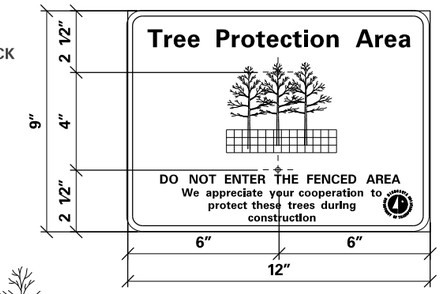
CORRECT CUT FROM POINT C TO D (LEAVING BRANCH COLLAR BUT NOT THE STUB FROM POINT B TO A) WILL RESULT IN CONTINUOUS DOUGHNUT SHAPED CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

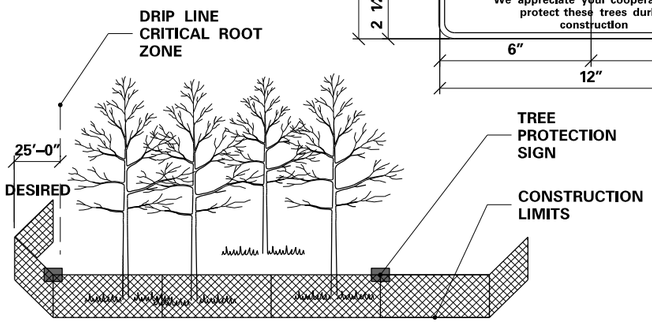
PRUNING NOTES:

1. PRUNE USING CLEAN AND SHARP SCISSOR-TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE OR WOUND WITH LATEX PAINT OR SHELLAC.

PRUNING
(MnDOT 2571.3E.1 and 2571.3K.2.a(9))

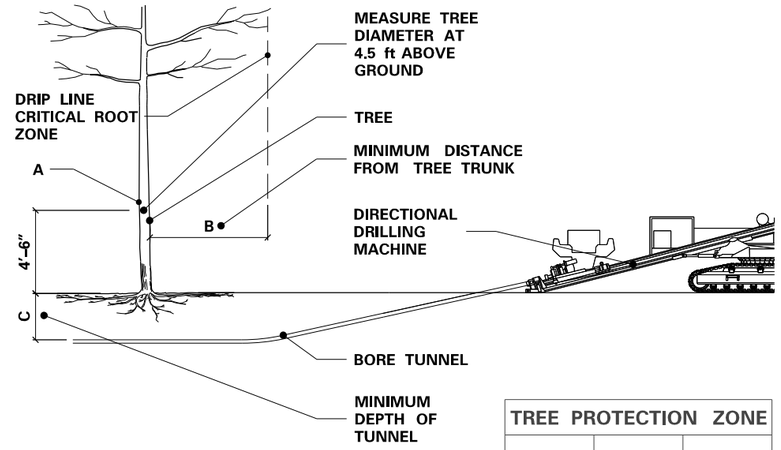
1. FABRICATE 12" X 9" X 3/8" SIGN WITH 0.75" RADIUS CORNERS.
2. SIGN SHALL BE WHITE WITH BLACK LETTERING.
3. ATTACH SIGN TO POST USING 1" LENGTH WOOD SCREWS.





1. FURNISH AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIPLINE OR CONSTRUCTION LIMITS AS SPECIFIED, PRIOR TO ANY CONSTRUCTION.
2. WHEN POSSIBLE PLACE FENCE 25 FEET BEYOND THE DRIP LINE.
3. PLACE TREE PROTECTION SIGNS ALONG FENCE AT 50' INTERVALS.

TEMPORARY FENCE
(MnDOT 2572.3A.1)

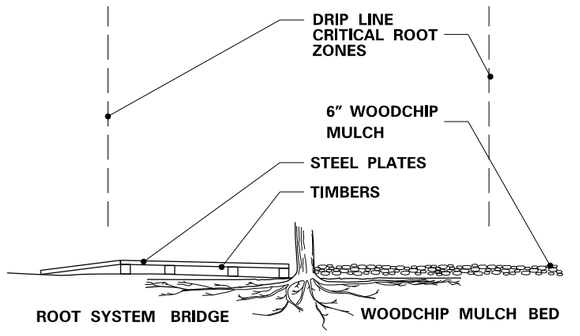


NOTE:

1. (A) IS THE DIAMETER OF TREES MEASURED 4'-6" FEET ABOVE THE GROUND AND IS TERMED THE "DIAMETER AT BREAST HEIGHT," (DBH).
2. USING A TREE DIAMETER TAPE, WRAP THE TAPE AROUND THE GIRTH OF THE TREE, AT THE DBH, BEING CAREFUL NOT TO TWIST THE TAPE.

TREE PROTECTION ZONE		
A	B	C
< 2"	2'	2'
2–4"	4'	2.5'
> 4–9"	6'	2.5'
> 9–14"	10'	3'
> 14–19"	12'	3.25'
> 19"	15'	4'

UTILITY CONSTRUCTION
(MnDOT 2572.3A.5)



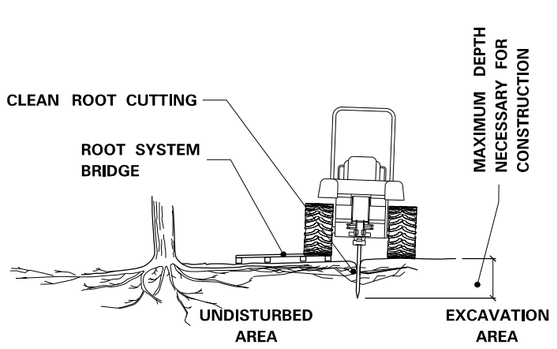
IF CONSTRUCTION VEHICLES MUST PASS OVER ROOT ZONES, THE CONTRACTOR MUST EITHER:

1. CONSTRUCT ROOT SYSTEM BRIDGES WITH STEEL PLATE SUPPORTED ON WOOD TIMBERS PLACED RADIALLY TO THE TREE TRUNK.

OR

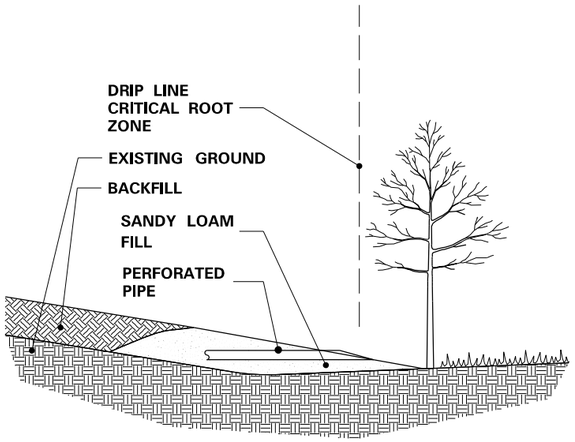
2. PLACE A 6 INCH LAYER OF WOODCHIP MULCH OVER A TYPE III GEOTEXTILE (MnDOT 3733).

OTHER VEGETATION PROTECTION MEASURES
(MnDOT 2572.3A.12)



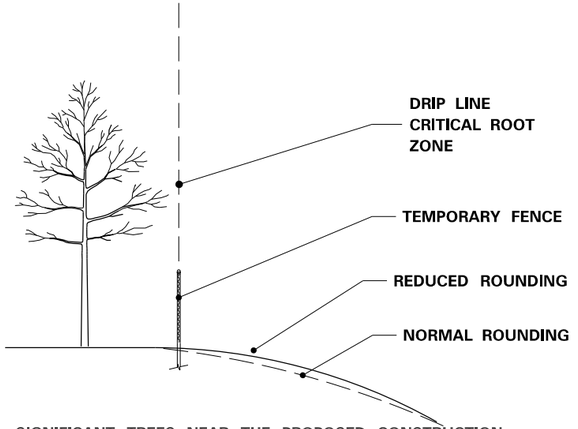
1. WHEN DESIGNATED IN THE PLAN OR DIRECTED BY THE ENGINEER, PRIOR TO EXCAVATION, ALL TREE ROOTS WILL BE CLEANLY CUT BY A VIBRATORY PLOW OR OTHER APPROVED ROOT CUTTER.
2. THE TREE ROOTS WILL BE CUT CLEANLY TO THE MINIMUM DEPTH NECESSARY FOR CONSTRUCTION.
3. IMMEDIATELY, AND CLEANLY CUT DAMAGED AND EXPOSED ROOTS.
4. ROOT ENDS EXPOSED BY EXCAVATION ACTIVITIES SHALL BE IMMEDIATELY COVERED WITH A 6" LAYER OF ADJACENT SOIL.
5. EXPOSED CUT OAK ROOTS SHALL BE IMMEDIATELY (WITHIN 5 MINUTES) TREATED WITH A WOUND DRESSING MATERIAL CONSISTING OF LATEX PAINT OR SHELLAC.

CLEAN ROOT CUTTING
(MnDOT 2572.3A.2)



1. ANY FILL REQUIRED WITHIN THE DRIP LINE OF TREES, IS UNCOMPACTED ROOTING TOPSOIL BORROW.
2. EXCESSIVE FILL MAY REQUIRE PLACING PERFORATED PIPE WITH AT LEAST ONE DAYLIGHTED END OPENING AS AN AERATION SYSTEM.

ROOTING TOPSOIL BORROW
(MnDOT 2572.3A.4)



SIGNIFICANT TREES NEAR THE PROPOSED CONSTRUCTION LIMITS WILL BE IDENTIFIED IN THE PLAN OR BY THE ENGINEER AND WILL BE PRESERVED BY THE CONTRACTOR.

1. PLACE THE TEMPORARY FENCE.
2. REDUCE SLOPE ROUNDING WHERE ROOT ZONES ARE DISTURBED BY NORMAL SLOPE ROUNDING.
3. VARY BACKSLOPE STEEPNESS TO AVOID TREE LOSS OR UNNECESSARY ROOT DAMAGE.

SLOPE ROUNDING

REVISION:

APPROVED: DECEMBER 11, 2015
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.302 | 1 OF 1

APPROVED: 12-11-2015
REVISED:

STATE DESIGN ENGINEER

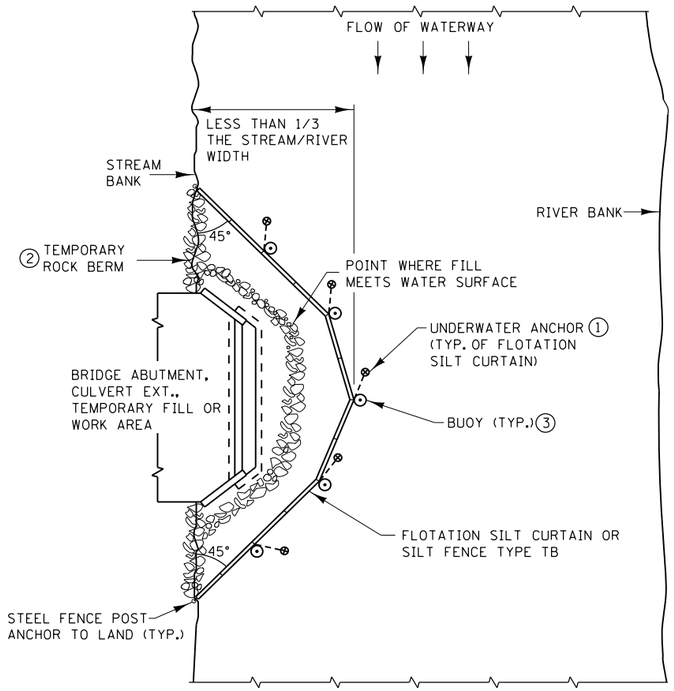
PROTECTION AND RESTORATION OF VEGETATION

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

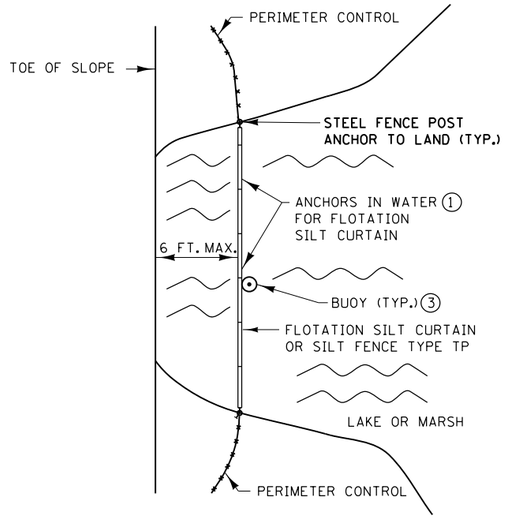
S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 45 OF 239 SHEETS

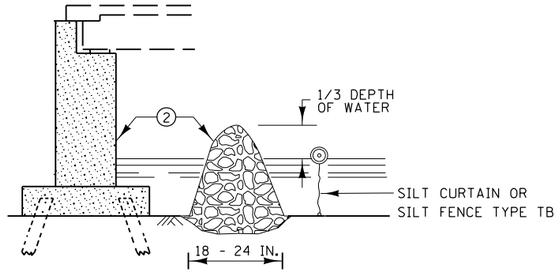
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PLAN VIEW FOR STREAM ⑤



PLAN VIEW FOR LAKE OR MARSH ⑤



TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL

INSTALLATION GUIDELINES
SILT FENCE TYPE TB

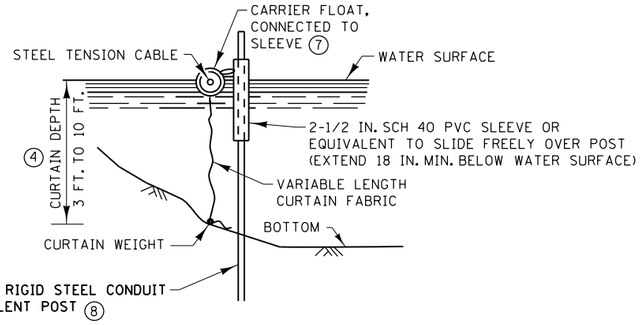
MINIMUM WATER DEPTH: 1 FT.
MAXIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: STILL WATER

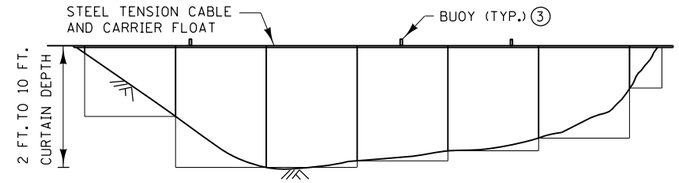
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 2 FT./SEC.
MAXIMUM WAVE HEIGHT: 1 FT

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: MOVING WATER

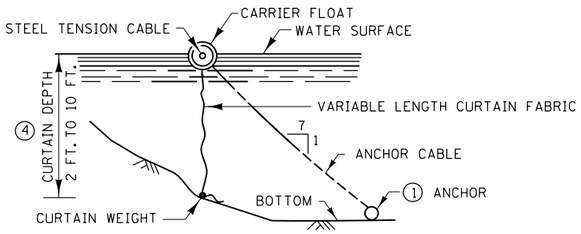
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WAVE HEIGHT: 2 FT.



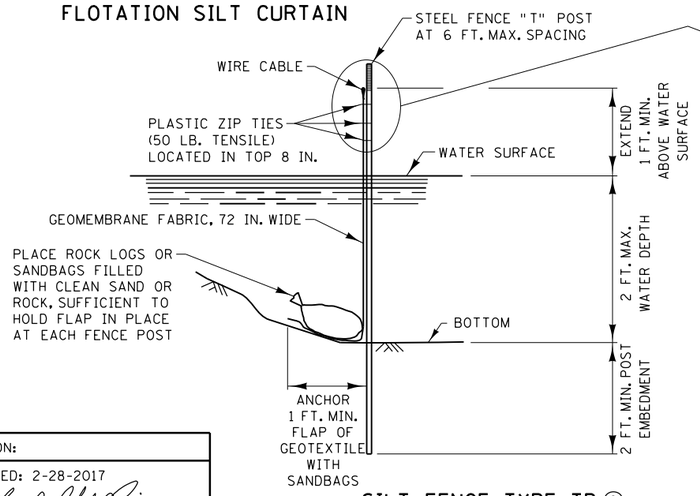
ALTERNATE FLOTATION SILT CURTAIN



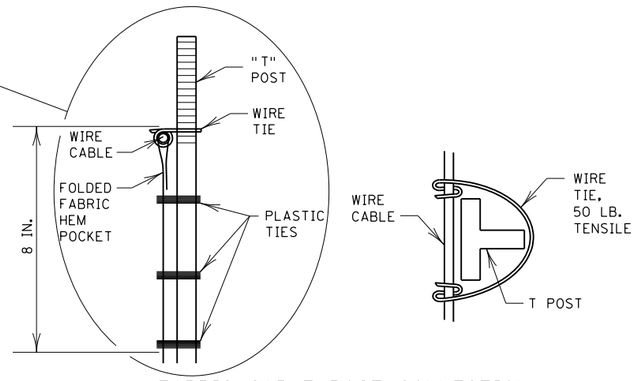
FRONT VIEW FOR FLOTATION SILT CURTAIN



FLOTATION SILT CURTAIN



SILT FENCE TYPE TB ⑥



FABRIC/CABLE/POST CONNECTION

NOTES:

SEE SPECS. 2573, 3886, 3887 & 3893.

① FOR ANCHOR SPACING AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.

② IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT A BRIDGE, CULVERT, OR SLOPE, A TEMPORARY ROCK BERM CONSTRUCTED FROM THE RIPRAP CAN BE USED TO PROVIDE ADDITIONAL PROTECTION. WHEN THE WORK IS COMPLETE THE RIPRAP CAN THEN BE MOVED TO THE PERMANENT LOCATION INDICATED IN THE PLANS. THE TEMPORARY ROCK BERM IS INCIDENTAL.

③ ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.

④ MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB.

⑤ SILT CURTAIN SHOULD BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF HAS BEEN TEMPORARILY OR PERMANENTLY STABILIZED. SILT CURTAIN SHOULD ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.

⑥ EMBED POST INTO BOTTOM A MINIMUM OF 40% OF THE WATER DEPTH (INCLUDING WAVE HEIGHT), BUT IN NO CASE SHALL EMBEDMENT BE LESS THAN 2 FEET.

⑦ ANCHOR FLOAT MUST BE CONNECTED SECURELY TO SLEEVE WITH A MINIMUM TENSILE STRENGTH OF 100 LBS. CONNECTION METHOD MUST ALLOW FOR SLEEVE TO MOVE FREELY ON POST.

⑧ PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | **1 OF 8**

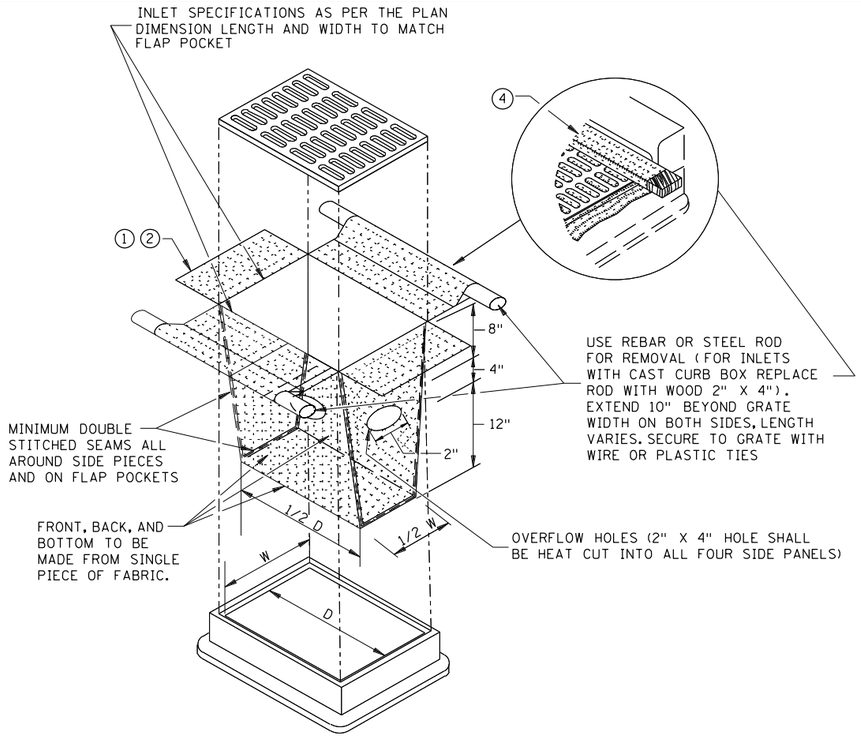
APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
SILT CURTAIN OR SILT FENCE TYPE TB

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

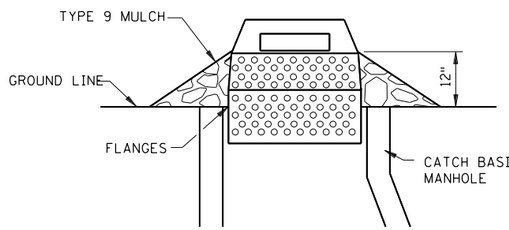
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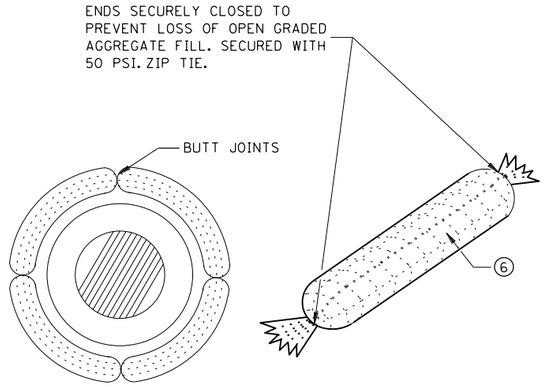
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)

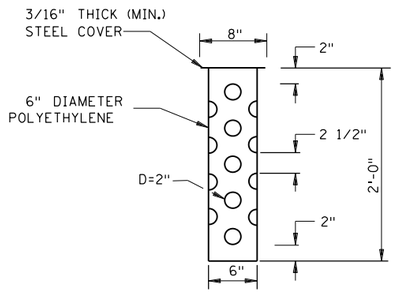


SEDIMENT CONTROL INLET HAT

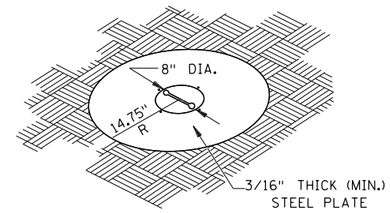
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL
OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE
THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW
FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING,
FLANGES AND A LID/COVER.



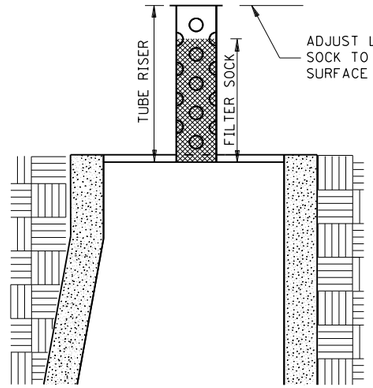
ROCK LOG/COMPOST LOG



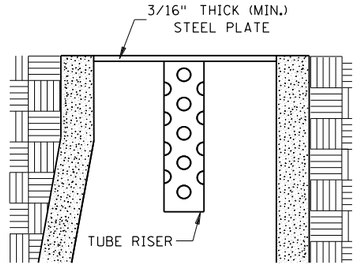
TUBE RISER



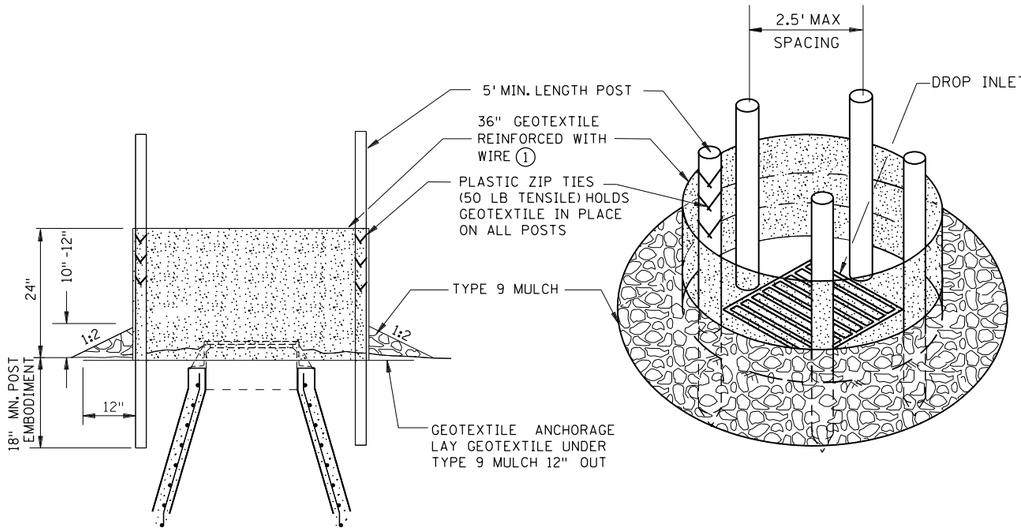
PERSPECTIVE VIEW



SECTION
(UP POSITION)



SECTION
(DOWN POSITION)



SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

POP-UP HEAD

NOTES:

SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.

1. ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
2. FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
3. INSTALLATION NOTES:
   DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
4. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
5. SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
6. GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 4 OF 8

APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

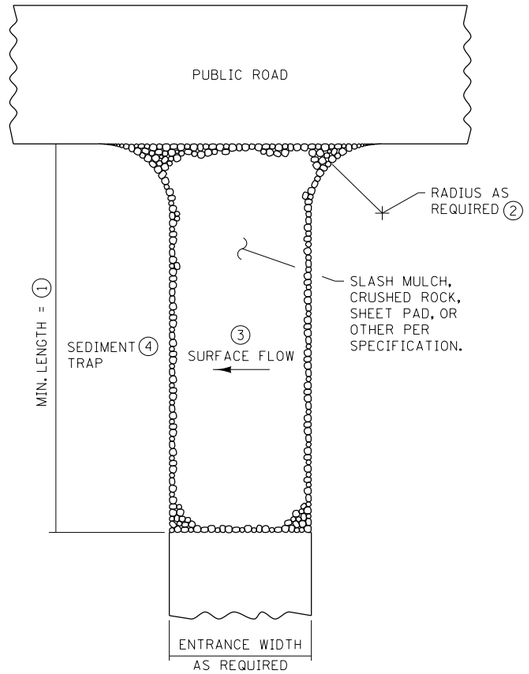
STORM DRAIN INLET PROTECTION

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

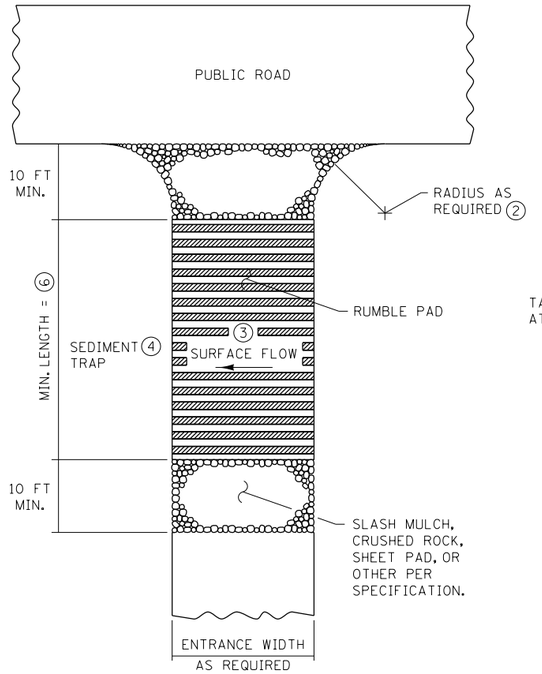
S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 47 OF 239 SHEETS

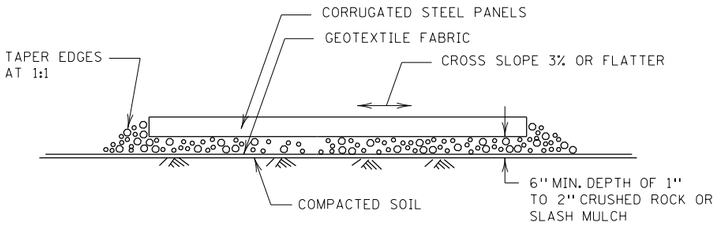
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2/8/2019
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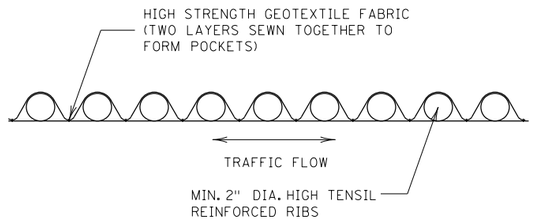
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT (5)(7)



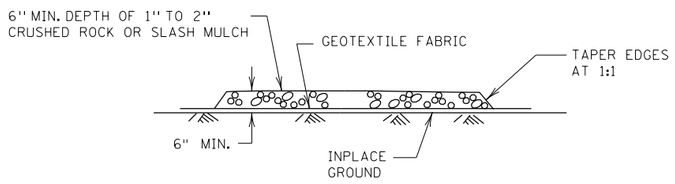
RUMBLE PAD CONSTRUCTION EXIT (5)(7)



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

(1) MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

(2) PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

(3) IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

(4) IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

(5) IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

(6) MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

(7) MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 5 OF 8

APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

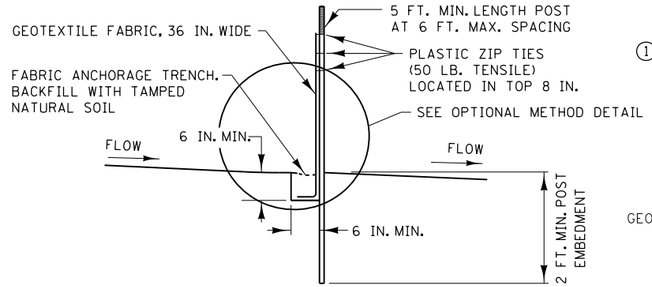
TEMPORARY SEDIMENT CONTROL

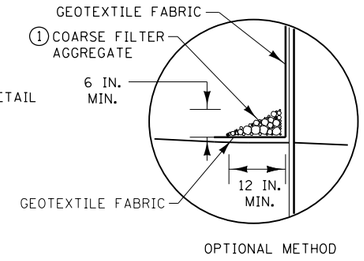
STABILIZED CONSTRUCTION EXIT

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

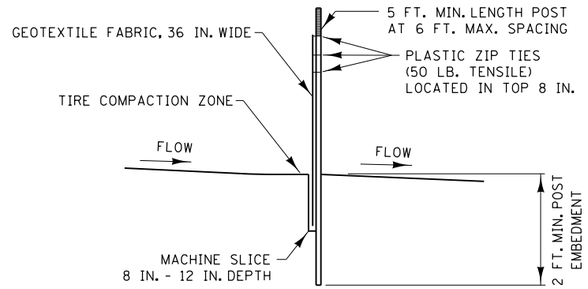
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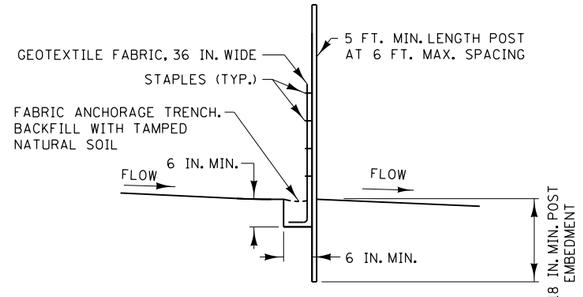




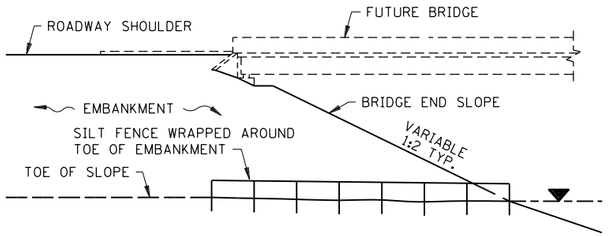
SILT FENCE TYPE HI ②
(HAND INSTALLED)



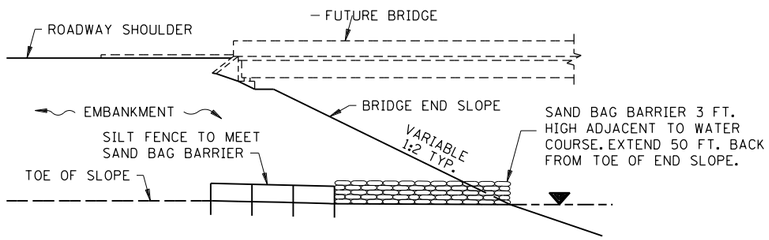
SILT FENCE TYPE MS ②
(MACHINE SLICED)



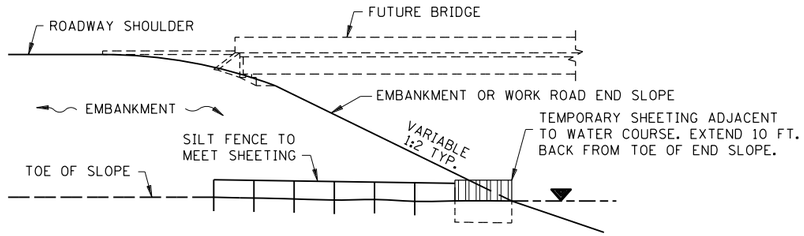
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

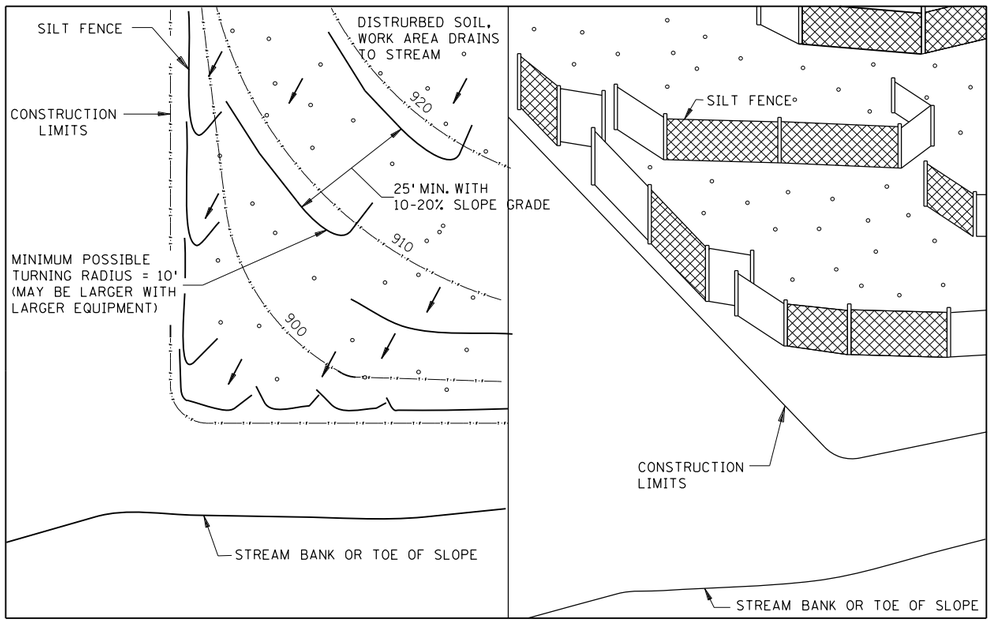


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

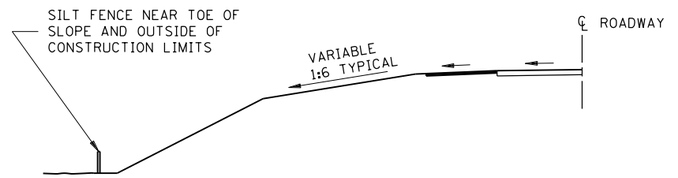
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING.
CONTRIBUTING SLOPE AREA: 1./2 ACRE.

⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1. ACRE.

⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | 6 OF 8

APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

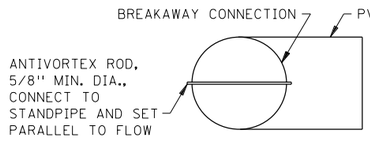
SILT FENCE

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

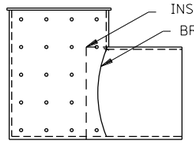
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SHEET NO. 49 OF 239 SHEETS

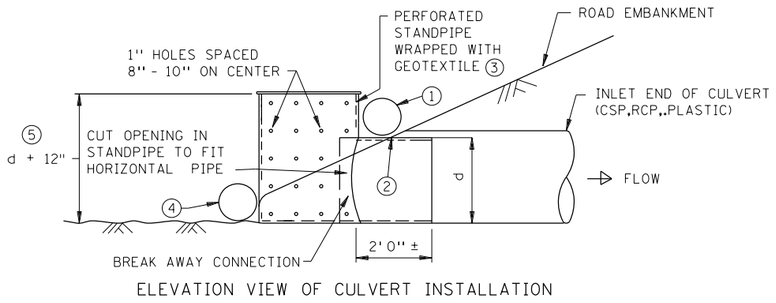
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PLAN VIEW



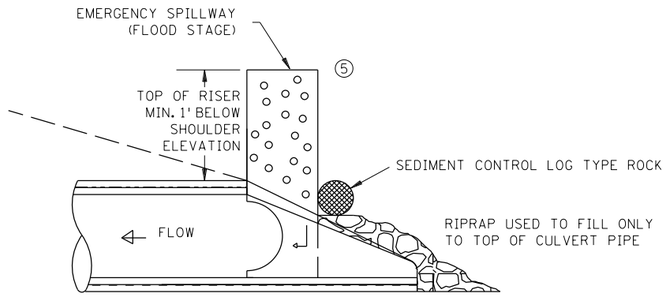
CULVERT STANDPIPE



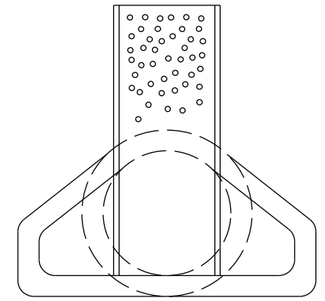
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

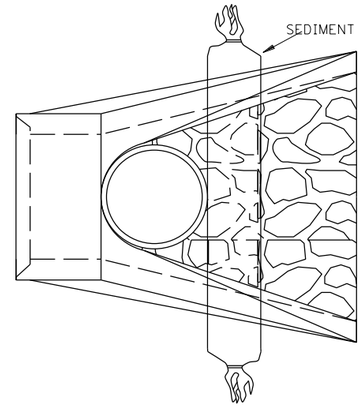
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



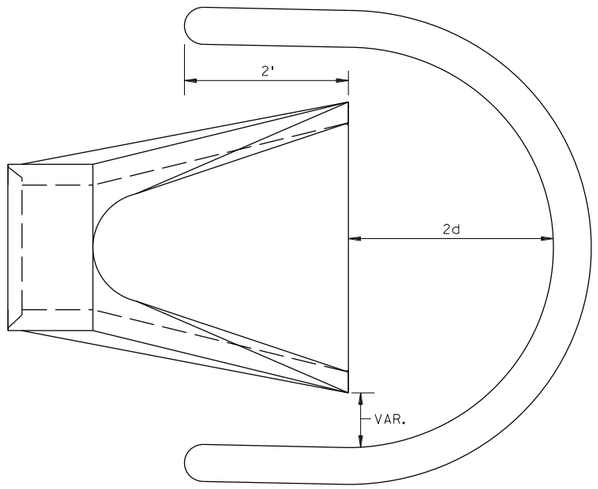
END VIEW



NOTE: SEDIMENT CONTROL LOG TYPE ROCK MAY BE WRAPPED AROUND RISER

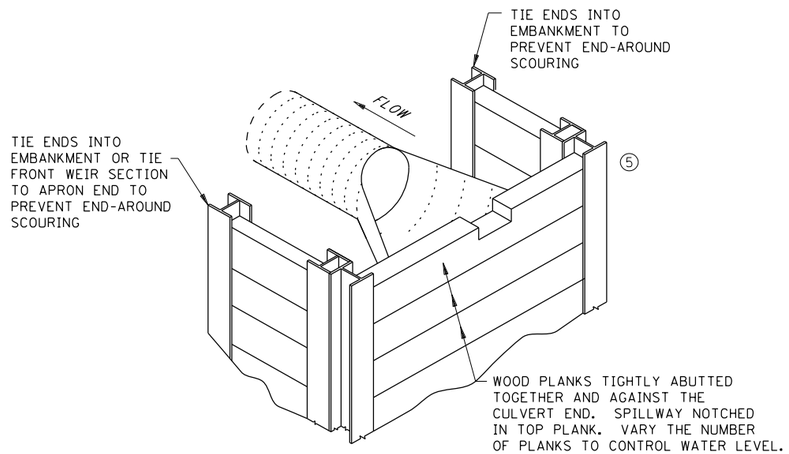
TOP VIEW

CULVERT STANDPIPE INSERT (D-RISER)



SEDIMENT CONTROL LOG WEIR
(COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12"-36"



WOOD PLANK WEIR

NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.

(1) ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.

(2) PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.

(3) ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.

(4) ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

(5) HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.405 | **8 OF 8**

APPROVED: 2-28-2017
REVISED:
STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL

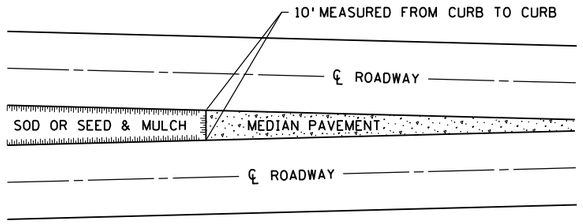
CULVERT END CONTROLS

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

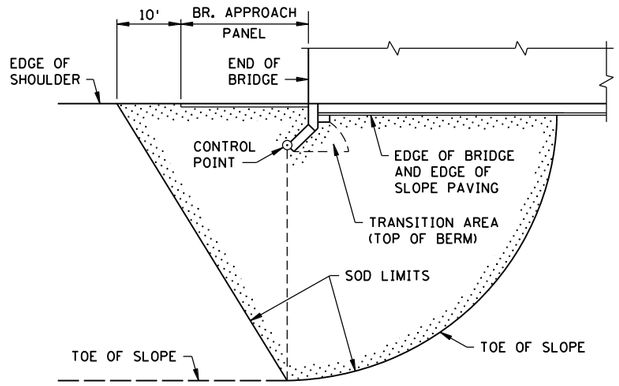
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SHEET NO. 50 OF 239 SHEETS

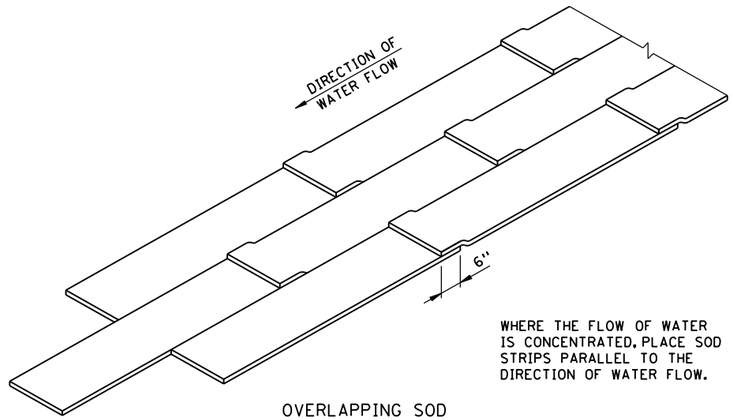
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SODDING LIMITS AT GORE AREA

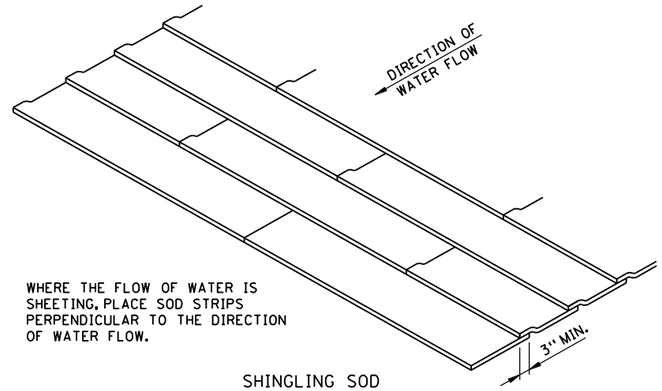


PLAN



WHERE THE FLOW OF WATER IS CONCENTRATED, PLACE SOD STRIPS PARALLEL TO THE DIRECTION OF WATER FLOW.

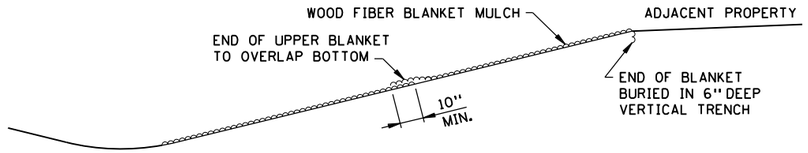
OVERLAPPING SOD



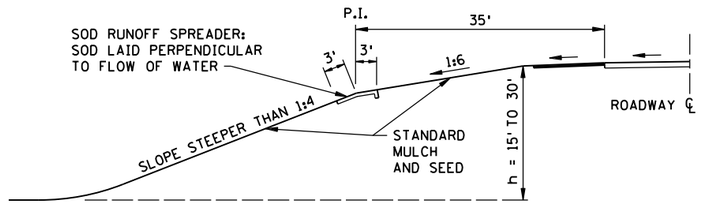
WHERE THE FLOW OF WATER IS SHEETING, PLACE SOD STRIPS PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

SHINGLING SOD

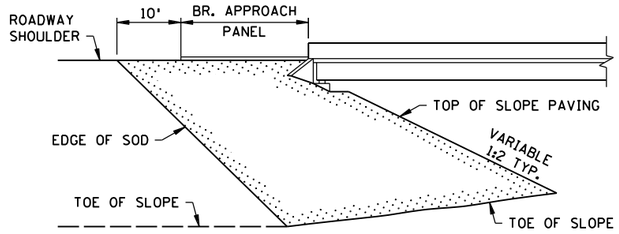
SPECIAL SOD PLACEMENT TECHNIQUES



WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE

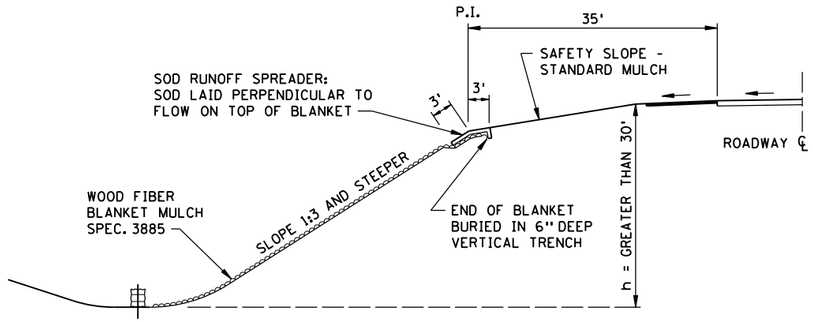


BROKEN-BACK SAFETY FILL SLOPE

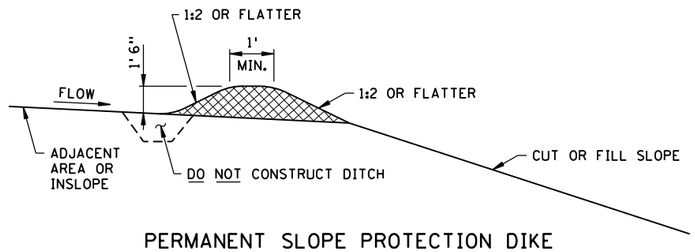


ELEVATION

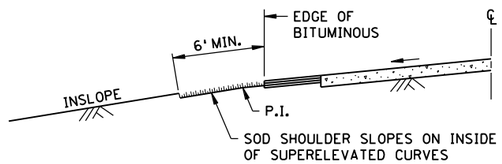
SODDING LIMITS AT BRIDGE APPROACH FILLS



WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



PERMANENT SLOPE PROTECTION DIKE



SODDING INSLOPES OF SUPERELEVATED CURVES

REVISION:

APPROVED: 8-6-2014
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.406 | 1 OF 1

APPROVED: 8-6-2014
REVISED:

STATE DESIGN ENGINEER

PERMANENT SEDIMENT CONTROL

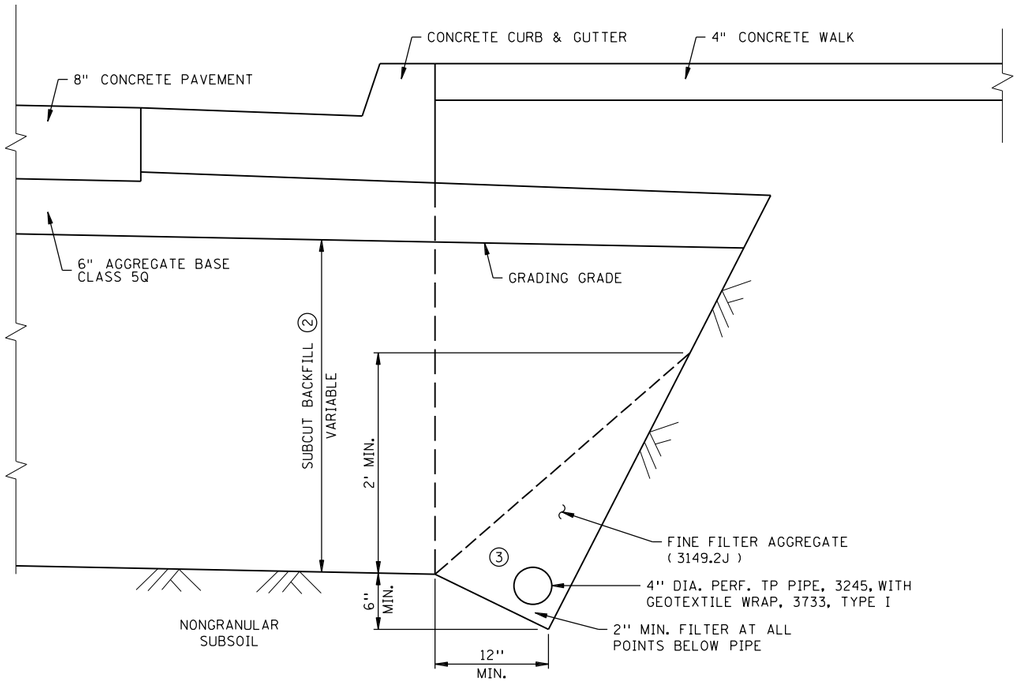
ALONG ROADWAYS AND AT GORE AREAS & BRIDGE APPROACH FILLS

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

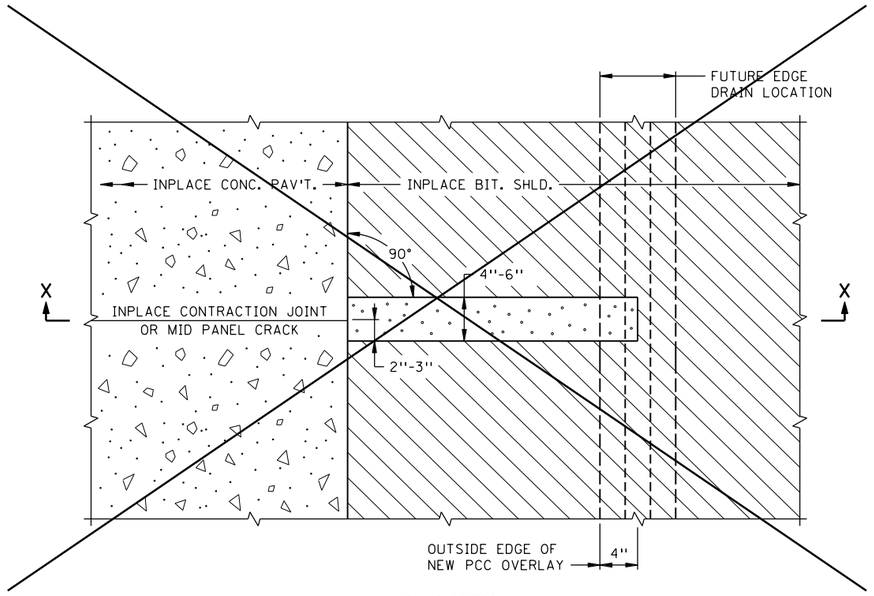
S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 51 OF 239 SHEETS

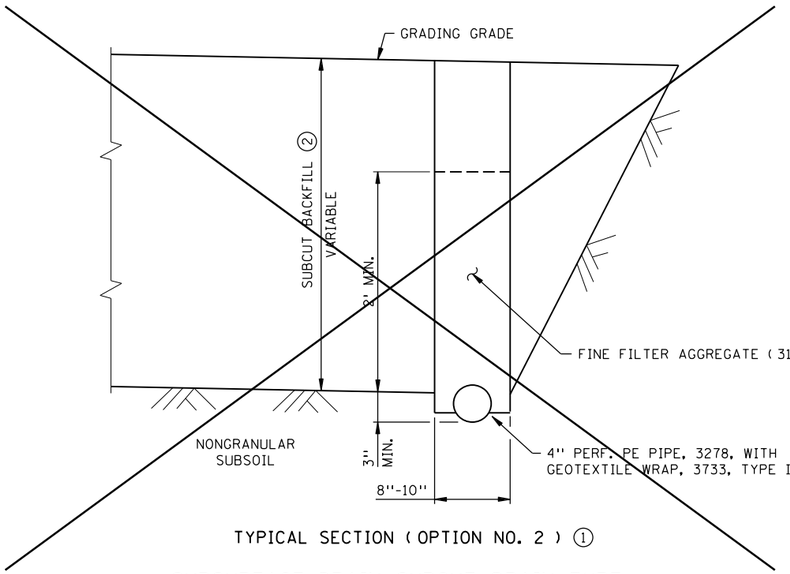
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TYPICAL SECTION (OPTION NO. 1) ①



PLAN VIEW



TYPICAL SECTION (OPTION NO. 2) ①

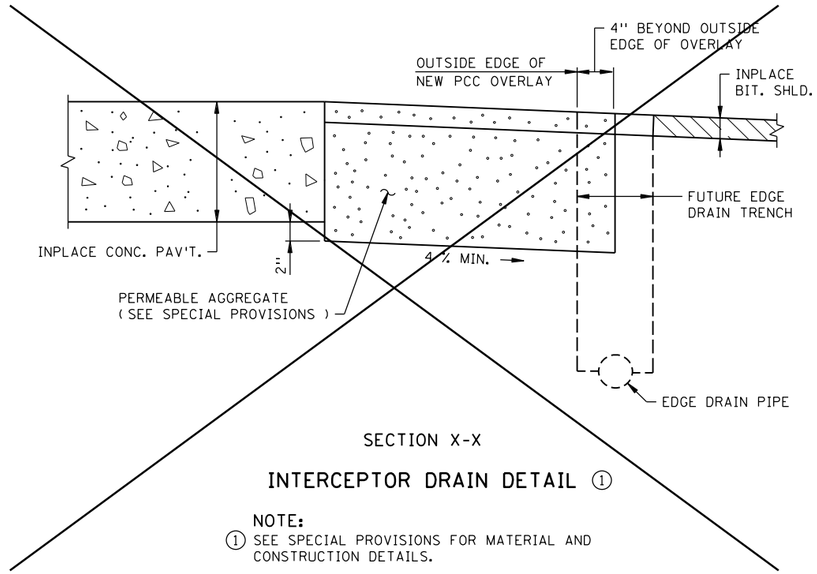
SUBSURFACE DRAIN, SUBCUT DRAIN TYPE

NOTES:

① MAY NEED TO BE MODIFIED FOR SPECIFIC PROJECTS. SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS. OPTION NO. 2 MAY ONLY BE USED WHEN PIPE IS TO BE PLACED BY MACHINE TRENCHER.

② GRANULAR, SELECT GRANULAR OR SELECT GRANULAR MODIFIED. (AS SHOWN IN DESIGN RECOMMENDATION LETTER).

③ ADJUST SUBSURFACE DRAIN (12" MAX) IF IN CONFLICT WITH LIGHT FOUNDATION. SEE LIGHTING PLANS FOR FOUNDATION LOCATIONS.



SECTION X-X

INTERCEPTOR DRAIN DETAIL ①

NOTE:

① SEE SPECIAL PROVISIONS FOR MATERIAL AND CONSTRUCTION DETAILS.

MODIFIED

CERTIFIED BY _____ PROFESSIONAL ENGINEER REG. NO. 47099 DATE: 12-27-2018

REVISION:

APPROVED: 8-6-2014

DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.430 | 1 OF 1

APPROVED: 8-6-2014

REVISED:

STATE DESIGN ENGINEER

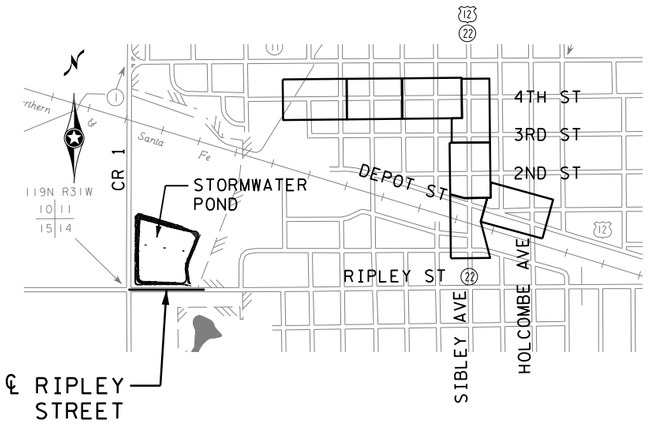
SUBSURFACE DRAINS

S.A.P. 135-010-008 S.A.P. 135-117-005
S.A.P. 135-010-009

S.P. NO. 4704-89 (T.H. 12)

SHEET NO. 52 OF 239 SHEETS

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HORIZONTAL CONTROL

COORDINATE VALUES SHOWN IN THIS PLAN ARE MEEKER COUNTY COORDINATES, REFERRED TO THE NORTH AMERICAN DATUM OF 1983 (1996 ADJ.)

CITY OF LITCHFIELD
MEEKER COUNTY

STA. 21+36.33
END S.P. 4705-47 (T.H. 12)
END S.A.P. 135-010-008
(DEPOT ST.)

℄ HOLCOMBE AVE.
(HOLCOMBE)

STA. 203+94.95
END S.A.P. 135-117-005
(HOLCOMBE AVE.)

STA. 200+36.97
BEGIN S.A.P. 135-117-005
(HOLCOMBE AVE.)

℄ T.H. 12
(TH12_EAST)

CURVE
TH12_EAST_8

MARSHALL AVE.

CURVE
TH12_EAST_5

℄ 4TH STREET
(4TH)

BEGIN S.P. 4704-89 (T.H. 12/22)
BEGIN S.A.P. 135-010-008
(SIBLEY AVE.)
STA. 661+51.07

END S.P. 4704-89 (4TH STREET)
END S.A.P. 135-010-008 (4TH STREET)
STA. 121+12.66

℄ T.H. 12/22
(TH12_NORTH)

3RD ST.
2ND ST.
COMMERCIAL ST.

STA. EQUATION
T.H. 12/22 (TH12_NORTH) BK 661+69.42=
T.H. 12/22 (TH12_NORTH) AH 0+00.00

MATCHLINE STA. 119+75

BEGIN S.P. 4705-47 (T.H. 12)
BEGIN S.A.P. 135-010-008 (DEPOT ST.)
STA. 12+80.87
END S.A.P. 135-010-009 (SIBLEY AVE.)
END S.P. 4709-32 (T.H. 22)
STA. 68+85.75
END S.P. 4704-89 (T.H. 12/22)
END S.A.P. 135-010-008 (SIBLEY AVE.)
STA. 12+87.87

℄ T.H. 22
(TH22)

BEGIN S.P. 4709-32 (T.H. 22)
BEGIN S.A.P. 135-010-009 (SIBLEY AVE.)
STA. 63+19.45

ALIGNMENTS MEET AT:
STA. 12+80.87 (T.H. 12)=
STA. 68+85.75 (T.H. 22)=
STA. 12+87.87 (T.H. 12/22)

STA. 100+16.38
BEGIN S.P. 4704-89 (4TH STREET)
BEGIN S.A.P. 135-010-008 (4TH STREET)

℄ 4TH STREET
(4TH)

N. DONNELLY AVE.
N. AUSTIN AVE.
N. SWIFT AVE.
N. MILLER AVE.
N. RAMSEY AVE.

MATCHLINE STA. 119+75

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

BOLTON & MENK
12224 NICOLLET AVENUE
BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burnsville@bolton-menk.com
www.bolton-menk.com

REV.	BY	DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
ALIGNMENT PLAN & TABULATION

SHEET 53 OF 239

CITY OF LITCHFIELD
MEEKER COUNTY

BEGIN S.P. 4704-89 (T.H. 12/22)
BEGIN S.A.P. 135-010-008
(SIBLEY AVE.)
STA. 661+51.07

℄ T.H. 12/22
(TH12_NORTH)

660

0

5

10

B/L TH12_WALK_E2

B/L TH12_CURB_E2

B/L TH12_CURB_E3

B/L TH12_WALK_E3

606 607 608 609
706 707 708 709

610 611 612
710 711 712

4TH ST.

901 902 903 904
801 802 803 804

3RD ST.

905 906 907 908
806 807 808

2ND ST.

910 911 912
810 811 812

DEPOT ST.

B/L TH12_CURB_W1

B/L TH12_WALK_W1

B/L TH12_CURB_W2

B/L TH12_WALK_W2

B/L TH12_CURB_W3

B/L TH12_WALK_W3

STA. EQUATION
T.H. 12/22 (TH12_NORTH) BK 661+69.42=
T.H. 12/22 (TH12_NORTH) AH 0+00.00

BEGIN S.P. 4705-47 (T.H. 12)
BEGIN S.A.P. 135-010-008 (DEPOT ST.)
STA. 12+80.87
END S.A.P. 135-010-009 (SIBLEY AVE.)
END S.P. 4709-32 (T.H. 22)
STA. 68+85.75
END S.P. 4704-89 (T.H. 12/22)
END S.A.P. 135-010-008 (SIBLEY AVE.)
STA. 12+87.87

CURB & SIDEWALK
ALIGNMENTS

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

BOLTON & MENK
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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
ALIGNMENT PLAN & TABULATION

SHEET 54 OF 239

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
T.H. 12/22 (TH12_NORTH)										
1400	POT	655+00.000						557,258.0554	187,730.8330	
STAEQN03	POT	0+00.000						557,264.6874	187,061.4458	
1401	POT	12+79.233						557,277.3610	185,782.2756	
1302	POT	12+87.870						557,277.4430	185,773.6410	
T.H. 12 (TH12_EAST)										
1302	POT	12+80.873						557,277.443	185,773.641	
	PC	13+47.698						557,341.0911	185,753.2826	107° 44' 15.96"
TH12_EAST_5	PI	13+94.896	2° 21' 22.85" LT	2° 29' 47.57"	2,295.000'	47.199'	94.384'	557,386.0460	185,738.9030	PI
	CC							558,040.2879	187,939.1803	
	PT	14+42.082						557,431.5541	185,726.3838	105° 22' 53.11"
	PC	17+22.364						557,701.7966	185,652.0409	105° 22' 53.11"
TH12_EAST_8	PI	17+72.464	1° 30' 24.39" RT	1° 30' 13.77"	3,810.000'	50.101'	100.196'	557,750.1030	185,638.7520	PI
	CC							556,691.2191	181,978.5095	
	PT	18+22.560						557,798.0432	185,624.1974	106° 53' 17.50"
1452	POT	30+00.007						558,924.7110	185,282.1432	
T.H. 22 (TH22)										
1300	POT	55+00.000						557,290.6507	184,387.9496	
1302	POT	68+85.75						557,277.443	185,773.641	
4TH STREET (4TH)										
1350	POT	100+00.000						555,200.9615	187,002.6770	
1351	POT	109+46.758						556,147.6538	187,013.8705	
1352	POT	122+38.252						557,439.0698	187,028.0027	
HOLCOMBE AVE. (HOLCOMBE)										
1500	POT	200+00.000						558,023.7123	185,422.4662	
1501	POT	205+25.244						558,019.9697	185,947.6964	
TH 12 WEST CURB FLOWLINE 4TH ST TO 3RD ST (TH 12_CURB_W1)										
1815	POT	900+39.603						557,217.6721	187,005.8787	
	PC	900+48.909						557,226.9770	187,005.9805	88° 56' 35.93"
TH12_CURB_W11	PI	900+59.667	90° 29' 20.53" RT	537° 07' 52.13"	10.667'	10.758'	16.847'	557,237.7336	187,006.1789	PI
	CC							557,227.1738	186,995.3153	
	PT	900+65.756						557,237.8402	186,995.4210	179° 25' 56.46"
	PC	904+20.619						557,241.3559	186,640.5748	179° 25' 56.46"
TH12_CURB_W12	PI	904+22.350	18° 26' 05.82" LT	537° 07' 52.13"	10.667'	1.731'	3.432'	557,241.3731	186,638.8439	PI
	CC							557,252.0224	186,640.6805	
	PT	904+24.051						557,241.9367	186,637.2072	160° 59' 50.64"
	PC	904+33.238						557,244.9281	186,628.5208	160° 59' 50.64"
TH12_CURB_W13	PI	904+34.969	18° 26' 05.82" RT	537° 07' 52.13"	10.667'	1.731'	3.432'	557,245.4918	186,626.8841	PI
	CC							557,234.8425	186,625.0475	
	PT	904+36.671						557,245.5089	186,625.1532	179° 25' 56.46"
	PC	904+37.940						557,245.5215	186,623.8842	179° 25' 56.46"
TH12_CURB_W14	PI	904+58.607	90° 00' 00.00" RT	277° 13' 59.42"	20.667'	20.667'	32.464'	557,245.7263	186,603.2183	PI
	CC							557,224.8555	186,623.6795	
	PT	904+70.403						557,225.0603	186,603.0135	269° 25' 56.46"
	PC	904+80.672						557,214.7918	186,602.9118	269° 25' 56.46"

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TH 12 WEST CURB FLOWLINE 4TH ST TO 3RD ST (TH 12_CURB_W1) (CONC.)										
TH12_CURB_W15	PI	904+82.403	18° 26' 05.82" RT	537° 07' 52.13"	10.667'	1.731'	3.432'	557,213.0609	186,602.8946	PI
	CC							557,214.6861	186,613.5782	
	PT	904+84.104						557,211.4133	186,603.4257	287° 52' 02.28"
	PC	904+99.053						557,197.1851	186,608.0123	287° 52' 02.28"
TH12_CURB_W16	PI	905+01.567	18° 13' 38.66" LT	365° 42' 35.86"	15.667'	2.513'	4.984'	557,194.7930	186,608.7835	PI
	CC							557,192.3782	186,593.1010	
	PT	905+04.038						557,192.2798	186,608.7677	269° 38' 23.61"
TH 12 WEST BACK OF WALK 4TH ST TO 3RD ST (TH 12_WALK_W1)										
1852	POT	800+69.937						557,226.0020	186,991.1220	
1853	POT	801+72.037						557,227.2040	186,889.0290	
1854	POT	802+50.133						557,227.8970	186,810.9360	
1855	POT	802+55.003						557,228.0440	186,806.0690	
1856	POT	803+15.464						557,228.5640	186,745.6100	
1857	POT	803+20.124						557,228.5679	186,740.9497	
1858	POT	803+36.343						557,228.7019	186,724.7315	
1859	POT	803+41.351						557,228.7378	186,719.7238	
1860	POT	803+66.011						557,229.0677	186,695.0654	
1861	POT	804+34.950						557,229.3250	186,626.1270	
TH 12 WEST CURB FLOWLINE 3RD ST TO 2ND ST (TH 12_CURB_W2)										
1820	POT	904+33.262						557,176.4293	186,558.0414	
	PC	904+38.276						557,181.4434	186,558.1089	89° 13' 42.16"
TH12_CURB_W21	PI	904+40.462	26° 21' 39.88" LT	613° 54' 19.00"	9.333'	2.186'	4.294'	557,183.6289	186,558.1384	PI
	CC							557,181.3177	186,567.4411	
	PT	904+42.570						557,185.5740	186,559.1352	62° 52' 02.28"
	PC	904+52.041						557,194.0024	186,563.4542	62° 52' 02.28"
TH12_CURB_W22	PI	904+54.541	26° 22' 45.30" RT	537° 07' 52.13"	10.667'	2.500'	4.911'	557,196.2271	186,564.5943	PI
	CC							557,198.8671	186,553.9611	
	PT	904+56.952						557,198.7268	186,564.6272	89° 14' 47.57"
	PC	904+83.598						557,225.3701	186,564.9776	89° 14' 47.57"
TH12_CURB_W23	PI	905+04.332	90° 11' 08.89" RT	277° 13' 59.42"	20.667'	20.734'	32.531'	557,246.1024	186,565.2502	PI
	CC							557,225.6419	186,544.3124	
	PT	905+16.128						557,246.3078	186,544.5171	179° 25' 56.46"
	PC	905+17.397						557,246.3204	186,543.2482	179° 25' 56.46"
TH12_CURB_W24	PI	905+19.128	18° 26' 05.82" RT	537° 07' 52.13"	10.667'	1.731'	3.432'	557,246.3376	186,541.5173	PI
	CC							557,235.6539	186,543.1425	
	PT	905+20.829						557,245.8065	186,539.8697	197° 52' 02.28"
	PC	905+30.233						557,242.9213	186,530.9197	197° 52' 02.28"
TH12_CURB_W25	PI	905+31.747	18° 26' 05.82" LT	613° 54' 19.00"	9.333'	1.515'	3.003'	557,242.4566	186,529.4782	PI
	CC							557,251.8042	186,528.0562	
	PT	905+33.236						557,242.4717	186,527.9638	179° 25' 56.46"
	PC	908+84.602						557,245.9527	186,176.6151	179° 25' 56.46"
TH12_CURB_W26	PI	908+95.283	90° 04' 43.46" RT	537° 07' 52.13"	10.667'	10.682'	16.770'	557,246.0585	186,165.9339	PI
	CC							557,235.2862	186,176.5094	
	PT	909+01.372						557,235.3773	186,165.8428	269° 30' 39.92"
1821	POT	909+10.097						557,226.6525	186,165.7684	

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S.A.P. 135-010-008
S.A.P. 135-010-009
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REV.	BY	DATE

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ANDREW H. KROG
LIC. NO. 54689
DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
ALIGNMENT PLAN & TABULATION

SHEET 55 OF 239

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TH 12 WEST BACK OF WALK 3RD ST TO 2ND ST (TH 12_WALK_W2) (CONC.)										
1902	POT	805+11.086						557,230.4431	186,549.9695	
1903	POT	805+15.382						557,230.5540	186,545.6750	
1904	POT	805+43.210						557,230.3180	186,517.8480	
1905	POT	805+60.963						557,230.9550	186,500.1060	
1906	POT	805+86.828						557,231.0960	186,474.2420	
1907	POT	806+12.247						557,231.3790	186,448.8240	
1908	POT	806+36.529						557,231.5190	186,424.5430	
1909	POT	806+63.086						557,231.6731	186,397.9862	
1910	POT	806+87.166						557,231.9725	186,373.9079	
1911	POT	807+06.538						557,232.0581	186,354.5365	
1912	POT	807+17.774						557,231.6510	186,343.3080	
1913	POT	807+36.625						557,232.0182	186,324.4601	
1914	POT	807+82.650						557,233.3200	186,278.4540	
1915	POT	807+98.851						557,233.6483	186,262.2559	
1916	POT	808+18.982						557,233.8920	186,242.1260	
1917	POT	808+34.245						557,234.0495	186,226.8644	
1918	POT	808+56.001						557,234.4260	186,205.1120	
1919	POT	808+63.903						557,234.1460	186,197.2140	
1920	POT	808+83.634						557,234.6020	186,177.4890	
TH 12 WEST CURB FLOWLINE 2ND ST TO DEPOT ST (TH 12_CURB_W3)										
1825	POT	909+25.288						557,227.0367	186,120.7459	
	PC	909+33.967						557,235.7132	186,120.9325	88° 46' 04.26"
TH12_CURB_W3_1	PI	909+44.758	90° 39' 52.20" RT	537° 07' 52.23"	10.667'	10.791'	16.879'	557,246.5021	186,121.1646	PI
	CC							557,235.9425	186,110.2680	
	PT	909+50.846						557,246.6090	186,110.3737	179° 25' 56.46"
	PC	912+17.508						557,249.2509	185,843.7252	179° 25' 56.46"
TH12_CURB_W3_2	PI	912+51.650	108° 18' 19.50" RT	232° 16' 37.39"	24.667'	34.142'	46.628'	557,249.5891	185,809.5847	PI
	CC							557,224.5851	185,843.4808	
	PT	912+64.136						557,217.0700	185,819.9865	287° 44' 15.96"
1826	POT	912+70.355						557,211.1463	185,821.8813	
TH 12 WEST BACK OF WALK 2ND ST TO DEPOT ST (TH 12_WALK_W3)										
1950	POT	809+52.902						557,234.1302	186,108.1697	
1951	POT	809+77.257						557,235.4723	186,083.8514	
1952	POT	810+01.916						557,235.6610	186,059.1930	
1953	POT	810+29.412						557,236.0220	186,031.6990	
1954	POT	810+53.059						557,236.2351	186,008.0535	
1955	POT	810+72.469						557,236.3080	185,988.6440	
1956	POT	810+96.204						557,236.9111	185,964.9164	
1957	POT	811+06.782						557,236.6358	185,954.3419	
1958	POT	811+21.493						557,236.6090	185,939.6307	
1959	POT	811+41.838						557,236.3340	185,919.2880	
1960	POT	811+73.642						557,237.0230	185,887.4910	
1961	POT	811+87.326						557,237.9984	185,873.8421	
1962	POT	812+07.579						557,238.2540	185,853.5909	
1963	POT	812+15.681						557,239.2540	185,845.5510	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TH 12 EAST CURB FLOWLINE 3RD ST TO 2ND ST (TH 12_CURB_E2)										
1805	POT	704+64.904						557,331.6429	186,563.3751	
	PC	704+69.904						557,326.6430	186,563.3093	269° 14' 47.57"
TH12_CURB_E21	PI	704+72.586	32° 03' 44.95" RT	613° 54' 19.00"	9.333'	2.682'	5.223'	557,323.9615	186,563.2741	PI
	CC							557,326.5202	186,572.6415	
	PRC	704+75.127						557,321.6703	186,564.6676	301° 18' 32.52"
	PRC	704+75.127						557,321.6703	186,564.6676	301° 18' 32.52"
TH12_CURB_E22	PI	704+78.173	31° 52' 36.06" LT	537° 07' 52.13"	10.667'	3.046'	5.935'	557,319.0676	186,566.2507	PI
	CC							557,316.1272	186,555.5540	
	PT	704+81.062						557,316.0215	186,566.2205	269° 25' 56.46"
	PC	704+83.320						557,313.7634	186,566.1981	269° 25' 56.46"
TH12_CURB_E23	PI	705+03.987	90° 00' 00.00" LT	277° 13' 59.42"	20.667'	20.667'	32.464'	557,293.0974	186,565.9934	PI
	CC							557,313.9681	186,545.5321	
	PT	705+15.784						557,293.3021	186,545.3274	179° 25' 56.46"
	PC	705+17.053						557,293.3147	186,544.0584	179° 25' 56.46"
TH12_CURB_E24	PI	705+18.784	18° 26' 05.82" LT	537° 07' 52.13"	10.667'	1.731'	3.432'	557,293.3318	186,542.3275	PI
	CC							557,303.9812	186,544.1641	
	PT	705+20.485						557,293.8955	186,540.6908	160° 59' 50.64"
	PC	705+29.888						557,296.9574	186,531.7997	160° 59' 50.64"
TH12_CURB_E25	PI	705+31.403	18° 26' 05.82" RT	613° 54' 19.00"	9.333'	1.515'	3.003'	557,297.4505	186,530.3677	PI
	CC							557,288.1330	186,528.7608	
	PT	705+32.891						557,297.4655	186,528.8533	179° 25' 56.46"
	PC	708+84.533						557,300.9493	186,177.2292	179° 25' 56.46"
TH12_CURB_E26	PI	708+95.530	91° 44' 52.09" LT	537° 07' 52.13"	10.667'	10.997'	17.081'	557,301.0583	186,166.2322	PI
	CC							557,311.6158	186,177.3348	
	PT	709+01.614						557,312.0468	186,166.6766	87° 41' 04.37"
1806	POT	709+22.994						557,333.4096	186,167.5403	
TH 12 EAST BACK OF WALK 3RD ST TO 2ND ST (TH 12_WALK_E2)										
2005	POT	605+08.146						557,309.6171	186,553.7171	
2006	POT	605+61.130						557,310.2030	186,500.7360	
2007	POT	605+66.930						557,310.4180	186,494.9400	
2008	POT	605+88.124						557,310.5250	186,473.7470	
2009	POT	606+01.699						557,310.8110	186,460.1750	
2010	POT	606+12.780						557,310.7120	186,449.0940	
2011	POT	606+31.793						557,310.9960	186,430.0830	
2012	POT	606+40.486						557,311.0310	186,421.3900	
2013	POT	606+56.138						557,311.1990	186,405.7390	
2014	POT	606+70.648						557,311.6160	186,391.2350	
2015	POT	606+87.155						557,311.4990	186,374.7290	
2016	POT	607+06.551						557,311.6140	186,355.3330	
2017	POT	607+58.176						557,312.1720	186,303.7110	
2018	POT	607+73.958						557,312.5420	186,287.9330	
2019	POT	608+12.402						557,312.8740	186,249.4910	
2020	POT	608+32.486						557,313.0190	186,229.4070	
2021	POT	608+56.262						557,313.1010	186,205.6310	
2022	POT	608+68.304						557,313.3430	186,193.5920	
2023	POT	608+82.407						557,313.3666	186,179.4887	

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ANDREW H. KROG
LIC. NO. 54689
DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
ALIGNMENT PLAN & TABULATION

SHEET 56 OF 239

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
TH 12 EAST CURB FLOWLINE 2ND ST TO DEPOT ST (TH 12_CURB_E3)										
1810	POT	709+12.293						557,333.8612	186,121.9644	
	PC	709+33.967						557,312.1875	186,121.7932	269° 32' 50.44"
TH12_CURB_E3_1	PI	709+44.655	90° 06' 53.98" LT	537° 07' 52.15"	10.667'	10.688'	16.777'	557,301.4994	186,121.7087	PI
	CC							557,312.2718	186,111.1265	
	PT	709+50.744						557,301.6053	186,111.0208	179° 25' 56.46"
	PC	712+33.479						557,304.4064	185,828.3000	179° 25' 56.46"
TH12_CURB_E3_2	PI	712+69.916	71° 26' 36.24" LT	113° 04' 58.92"	50.667'	36.437'	63.178'	557,304.7674	185,791.8647	PI
	CC							557,355.0709	185,828.8019	
	PT	712+96.657						557,339.4232	185,780.6117	107° 59' 20.22"
TH 12 EAST BACK OF WALK 2ND ST TO DEPOT ST (TH 12_WALK_E3)										
2050	POT	609+52.304						557,313.9790	186,109.5742	
2051	POT	609+77.923						557,314.3480	186,083.9580	
2052	POT	610+02.238						557,315.2835	186,059.6608	
2053	POT	610+12.017						557,315.6139	186,049.8880	
2054	POT	610+29.373						557,315.4888	186,032.5319	
2055	POT	610+51.681						557,315.6448	186,010.2249	
2056	POT	610+85.814						557,316.2164	185,976.0961	
2057	POT	611+02.852						557,316.4505	185,959.0602	
2058	POT	611+34.203						557,316.6510	185,927.7100	
2059	POT	611+48.088						557,316.6684	185,913.8250	
2060	POT	611+61.654						557,316.5348	185,900.2590	
2061	POT	611+78.998						557,316.6539	185,882.9160	
2062	POT	611+99.567						557,316.6590	185,862.3470	
2063	POT	612+20.545						557,316.7470	185,841.3690	
2064	POT	612+38.605						557,317.0266	185,823.3112	
2065	POT	612+54.573						557,317.2407	185,807.3441	
RIPLEY STREET (RIPLEY)										
1700	POT	300+00.000						553,218.5590	184,767.2435	
1701	POT	319+69.526						555,188.0148	184,783.8793	

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T.H. 12/22 RECONSTRUCTION
ALIGNMENT PLAN & TABULATION

SHEET 57 OF 239

UTILITY OWNERS

THE FOLLOWING LIST SHOWS THE UTILITY COMPANIES INVOLVED WITH THIS PROJECT

AFFECTED	UNAFFECTED
CENTERPOINT ENERGY	SMMPA
CENTURYLINK	MEEKER COOP
CITY OF LITCHFIELD	
MEDIACOM	
NUVERA	

GENERAL NOTES:

ALL UTILITY WORK SHOWN ON THESE SHEETS SHALL BE DONE BY OTHERS UNLESS NOTED.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI / ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".

THE FOLLOWING WORK ON CITY OF LITCHFIELD UTILITIES ARE TO BE PERFORMED UNDER THIS CONTRACT AND IS SHOWN IN SECTION M OF THIS PLAN:
-SANITARY SEWER
-STORM SEWER
-WATER UTILITY
REFER TO CITY UTILITY PLAN FOR MORE INFORMATION.

THE CITY OF LITCHFIELD ELECTRIC, COMMUNICATION (FIBER OPTIC), AND STEAM LINE WORK, AS SHOWN IN THESE TABULATIONS, WILL BE COMPLETED BY THE CITY OF LITCHFIELD.

ALL POWER LINES ARE DISTRIBUTION UNLESS NOTED OTHERWISE.

UTILITY INFORMATION

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO UTILITIZE THE GOPHER STATE EXCAVATION NOTICE SYSTEM REQUIRED BY MINNESOTA STATUTE 216D FOR ALL UNDERGROUND UTILITY LOCATIONS

LEGEND

	UTILITY POLE	WM	WATERMAIN
	LIGHT POLE	SS	SEWER AND SANITATION
U	UTILITY HANDHOLE	ST	STORM SEWER
M	UTILITY MANHOLE		CONSTRUCTION LIMITS
	UTILITY PEDESTAL		EXISTING RIGHT-OF-WAY
	UTILITY METER		PROPOSED RIGHT-OF-WAY
	UTILITY VALVE		TEMPORARY EASEMENT/ TEMPORARY ORDERS
	HYDRANT		TREES
	TRAFFIC SIGNAL	XC	FENCE
OHP	OVERHEAD UTILITIES		STORM SEWER/APRON
GAS	GAS		STORM SEWER CATCH BASIN
P-BUR	ELECTRIC UNDERGROUND	SIG-BUR	TRAFFIC SIGNAL UNDERGROUND
TV-BUR	TV UNDERGROUND		OVERHEAD CABLE
T-BUR	TELEPHONE UNDERGROUND		
F/O -BUR	FIBER OPTIC UNDERGROUND		

GAS TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
4TH STREET	100+00 - 102+22	25RT	GAS LINE	CENTERPOINT ENERGY	X						
4TH STREET	102+22 - 102+23	25RT - 246RT	GAS LINE	CENTERPOINT ENERGY	X						
4TH STREET	105+96 - 105+90	235LT - 250RT	GAS LINE	CENTERPOINT ENERGY				X			
4TH STREET	109+69 - 109+67	239LT - 211RT	GAS LINE	CENTERPOINT ENERGY	X						SUPPORT AT STORM CROSSING
4TH STREET	112+98 - 112+97	240LT - 214RT	GAS LINE	CENTERPOINT ENERGY	X						SUPPORT AT STORM CROSSING
4TH STREET	114+98 - 115+02	56LT - 49RT	GAS LINE	CENTERPOINT ENERGY	X						SUPPORT AT STORM CROSSING
4TH STREET	115+07	38LT - 49RT	GAS LINE	CENTERPOINT ENERGY	X						SUPPORT AT STORM CROSSING
4TH STREET	115+07 - 118+80	22RT	GAS LINE	CENTERPOINT ENERGY				X			
4TH STREET	118+81 - 118+80	36LT - 22RT	GAS LINE	CENTERPOINT ENERGY	X						SUPPORT AT STORM CROSSING
4TH STREET	118+80 - 119+11	22RT - 21RT	GAS LINE	CENTERPOINT ENERGY				X			
4TH STREET	119+11 - 119+31	21RT - 13RT	GAS LINE	CENTERPOINT ENERGY				X			
4TH STREET	119+31 - 121+00	13RT - 14RT	GAS LINE	CENTERPOINT ENERGY				X			
4TH STREET	121+00-122+12	14RT	GAS LINE	CENTERPOINT ENERGY	X						
T.H. 12/22	4+28 - 5+18	178RT - 179RT	GAS LINE	CENTERPOINT ENERGY	X						
T.H. 12/22	4+94 - 4+94	181LT - 221LT	GAS LINE	CENTERPOINT ENERGY	X						
T.H. 12/22	4+94 - 5+15	181LT	GAS LINE	CENTERPOINT ENERGY	X						
T.H. 12/22	8+77 - 9+50	182RT - 181RT	GAS LINE	CENTERPOINT ENERGY	X						
T.H. 12/22	9+37	214RT - 195LT	GAS LINE	CENTERPOINT ENERGY	X						SUPPORT AT STORM CROSSING
T.H. 12/22	9+37 - 9+63	195LT	GAS LINE	CENTERPOINT ENERGY	X						
T.H. 22	64+12 - 64+16	49LT - 106RT	GAS LINE	CENTERPOINT ENERGY	X						SUPPORT AT STORM CROSSING
T.H. 22	64+16 - 63+92	106RT - 177RT	GAS LINE	CENTERPOINT ENERGY	X						
T.H. 12	15+77 - 16+50	24RT - 26RT	GAS LINE	CENTERPOINT ENERGY				X			
T.H. 12	15+82 - 16+50	217LT - 26RT	GAS LINE	CENTERPOINT ENERGY	X						SUPPORT AT STORM CROSSING
T.H. 12	16+27 - 18+75	62LT - 139LT	GAS LINE	CENTERPOINT ENERGY	X						
T.H. 12	16+50 - 22+98	26RT - 33RT	GAS LINE	CENTERPOINT ENERGY	X						
HOLCOMBE AVE	200+00 - 201+10	20LT	GAS LINE	CENTERPOINT ENERGY				X			
HOLCOMBE AVE	203+09	15RT - 50RT	GAS LINE	CENTERPOINT ENERGY				X			
HOLCOMBE AVE	203+09	50RT - 221RT	GAS LINE	CENTERPOINT ENERGY	X						
HOLCOMBE AVE	203+09 - 204+68	14RT - 15RT	GAS LINE	CENTERPOINT ENERGY				X			
HOLCOMBE AVE	203+20 - 203+20	133LT - 26RT	GAS LINE	CENTERPOINT ENERGY	X						SUPPORT AT STORM CROSSING
RIPLEY ST	301+01 - 308+59	13LT - 14LT	GAS LINE	CENTERPOINT ENERGY	X						10" STEEL
RIPLEY ST	308+59 - 308+99	15LT	GAS LINE	CENTERPOINT ENERGY				X			10" STEEL
RIPLEY ST	308+99 - 310+62	14LT -15LT	GAS LINE	CENTERPOINT ENERGY	X						10" STEEL

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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
EXISTING UTILITY TABULATION

SHEET 58 OF 239

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COMMUNICATIONS TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
4TH STREET	100+00 - 103+94	25LT - 47LT	BURIED TELEPHONE	CENTURYLINK	X						
4TH STREET	103+94	25LT	PEDESTAL	CENTURYLINK	X						
4TH STREET	103+96	25LT	PEDESTAL	NUTEL	X						
4TH STREET	103+88 - 103+98	47RT - 54LT	BURIED TELEPHONE	CENTURYLINK	X						SUPPORT AT STORM CROSSING
4TH STREET	103+87 - 103+93	47RT - 54LT	BURIED TELEPHONE	NUTEL	X						SUPPORT AT STORM CROSSING
4TH STREET	100+00 - 103+86	16RT - 21RT	BURIED TELEPHONE	CITY OF LITCHFIELD	X						
4TH STREET	103+98 - 104+00	48RT - 53LT	BURIED TELEVISION	MEDIACOM	X						SUPPORT AT STORM CROSSING
4TH STREET	103+96 - 105+57	25LT - 22LT	BURIED TELEPHONE	NUTEL	X						
4TH STREET	105+57 - 105+60	22LT - 212LT	BURIED TELEPHONE	NUTEL	X						
4TH STREET	103+93 - 107+75	25LT - 12LT	BURIED TELEPHONE	CENTURYLINK				X			
4TH STREET	107+66	34RT - 21LT	BURIED TELEPHONE	CENTURYLINK	X						SUPPORT AT STORM CROSSING
4TH STREET	107+66	21LT	PEDESTAL	CENTURYLINK	X						
4TH STREET	107+72 - 107+75	33RT - 43LT	BURIED TELEPHONE	NUTEL	X						SUPPORT AT STORM CROSSING
4TH STREET	107+67 - 107+66	34RT - 43LT	BURIED TELEVISION	MEDIACOM	X						SUPPORT AT STORM CROSSING
4TH STREET	107+75 - 111+30	10LT - 15LT	BURIED TELEPHONE	CENTURYLINK	X						2 CONDUITS, SUPPORT AT STORM CROSSING
4TH STREET	111+24 - 111+29	30RT - 43LT	BURIED TELEPHONE	NUTEL	X						SUPPORT AT STORM CROSSING
4TH STREET	111+32	24LT	PEDESTAL	NUTEL	X						
4TH STREET	111+35 - 111+39	30RT - 43LT	BURIED TELEPHONE	CENTURYLINK	X						SUPPORT AT STORM CROSSING
4TH STREET	111+33 - 111+35	37RT - 43LT	BURIED TELEVISION	MEDIACOM	X						SUPPORT AT STORM CROSSING
4TH STREET	111+30 - 115+09	15LT - 23LT	BURIED TELEPHONE	CENTURYLINK				X			2 CONDUITS
4TH STREET	114+96 - 115+09	31RT - 23RT	BURIED TELEPHONE	CENTURYLINK	X						
4TH STREET	115+09	23RT - 49LT	BURIED TELEPHONE	CENTURYLINK	X						SUPPORT AT STORM CROSSING
4TH STREET	115+08	34LT	PEDESTAL	CENTURYLINK	X						
4TH STREET	115+11	34LT	PEDESTAL	CENTURYLINK	X						
4TH STREET	114+93 - 114+94	49RT - 25LT	BURIED TELEVISION	MEDIACOM	X						SUPPORT AT STORM CROSSING
4TH STREET	114+94 - 115+05	25LT	BURIED TELEVISION	MEDIACOM	X						
4TH STREET	115+05	25LT - 55LT	BURIED TELEVISION	MEDIACOM	X						
4TH STREET	115+09 - 116+74	14LT - 16LT	BURIED TELEPHONE	CENTURYLINK				X			2 CONDUITS
4TH STREET	116+74	16LT	MANHOLE	CENTURYLINK				X			
4TH STREET	116+72 - 116+75	218RT - 234LT	BURIED TELEPHONE	CENTURYLINK	X						SUPPORT AT STORM CROSSING
4TH STREET	116+75	42RT	MANHOLE	CENTURYLINK	X						
4TH STREET	117+14	41RT	UTILITY MANHOLE	NUTEL	X						
4TH STREET	117+16	41RT	PEDESTAL	NUTEL	X						
4TH STREET	117+16	42RT	PEDESTAL	NUTEL	X						
4TH STREET	117+16 - 117+81	42LT - 45RT	BURIED TELEPHONE	NUTEL	X						SUPPORT AT STORM CROSSING
4TH STREET	116+74 - 118+72	16LT - 17LT	BURIED TELEPHONE	CENTURYLINK				X			DUCT
4TH STREET	118+72	17LT	MANHOLE	CENTURYLINK				X			
4TH STREET	118+74 - 118+79	17LT - 7RT	BURIED TELEPHONE	CENTURYLINK	X						SUPPORT AT STORM CROSSING
4TH STREET	118+72 - 122+24	8LT - 24LT	BURIED TELEPHONE	CENTURYLINK				X			2 CONDUITS

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					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
T.H. 12/22	4+28 - 5+18	186RT	BURIED TELEPHONE	CENTURYLINK	X						
T.H. 12/22	4+35 - 4+46	197RT - 222LT	BURIED TELEPHONE	NUTEL	X						SUPPORT AT STORM CROSSING
T.H. 12/22	4+35	197RT	PEDESTAL	NUTEL	X						
T.H. 12/22	4+35 - 5+19	195RT - 197RT	BURIED TELEPHONE	NUTEL	X						
T.H. 12/22	4+47 - 5+15	177LT - 181LT	BURIED TELEPHONE	NUTEL	X						
T.H. 12/22	4+35 - 5+19	195RT - 197RT	BURIED TELEVISION	MEDICOM	X						
T.H. 12/22	8+77 - 9+50	202RT - 199RT	BURIED TELEPHONE	NUTEL	X						
T.H. 12/22	8+77 - 9+07	186RT - 214RT	BURIED TELEPHONE	CENTURYLINK	X						
T.H. 12/22	8+77 - 9+63	220LT	BURIED TELEVISION	MEDICOM	X						
T.H. 12/22	8+74 - 9+63	193LT - 188LT	BURIED TELEPHONE	NUTEL	X						
T.H. 12/22	8+74 - 9+63	196LT - 200LT	BURIED TELEPHONE	CENTURYLINK	X						
T.H. 12/22	9+10 - 9+47	185RT	BURIED TELEPHONE	CENTURYLINK	X						
T.H. 12/22	9+08	186RT	MANHOLE	CENTURYLINK	X						
T.H. 12/22	9+08	186RT - 117RT	BURIED TELEPHONE	CENTURYLINK	X						
T.H. 12/22	9+08	117RT	MANHOLE	CENTURYLINK	X						
T.H. 12/22	9+06 - 9+08	47R - 117RT	BURIED TELEPHONE	CENTURYLINK	X						
T.H. 12/22	9+06 - 9+08	47RT - 22LT	BURIED TELEPHONE	CENTURYLINK				X			DUCT
T.H. 12/22	9+06	22LT	MANHOLE	CENTURYLINK				X			
T.H. 12/22	9+06 - 9+07	22LT - 60LT	BURIED TELEPHONE	CENTURYLINK				X			DUCT
T.H. 12/22	9+06 - 9+07	60LT - 200LT	BURIED TELEPHONE	CENTURYLINK	X						
T.H. 12/22	9+07	200LT	MANHOLE	CENTURYLINK	X						
T.H. 12/22	9+06 - 12+79	22LT - 24LT	BURIED TELEPHONE	CENTURYLINK				X			DUCT
T.H. 22	63+24 - 68+94	17RT - 25RT	BURIED TELEPHONE	CENTURYLINK				X			DUCT
T.H. 22	64+54	23RT	MANHOLE	CENTURYLINK				X			
HOLCOMBE AVE	200+00 - 202+56	27LT - 28LT	BURIED TELEPHONE	NUTEL				X			
HOLCOMBE AVE	202+60 - 202+67	101LT - 186RT	BURIED TELEVISION	MEDIACOM	X						SUPPORT AT STORM CROSSING
HOLCOMBE AVE	202+60	101LT	PEDESTAL	MEDIACOM	X						
HOLCOMBE AVE	202+60 - 202+68	101LT - 25LT	BURIED TELEVISION	MEDIACOM	X						
HOLCOMBE AVE	202+68 - 204+68	25LT - 26LT	BURIED TELEVISION	MEDIACOM				X			
HOLCOMBE AVE	202+60	95LT	PEDESTAL	NUTEL	X						
HOLCOMBE AVE	202+60	95LT - 224RT	BURIED TELEPHONE	NUTEL	X						SUPPORT AT STORM CROSSING
HOLCOMBE AVE	202+60	103LT	PEDESTAL	CENTURYLINK	X						
HOLCOMBE AVE	202+60 - 202+69	103LT - 224RT	BURIED TELEPHONE	CENTURYLINK	X						SUPPORT AT STORM CROSSING
HOLCOMBE AVE	202+56 - 204+68	28LT	BURIED TELEPHONE	CENTURYLINK				X			
RIPLEY ST	300+71 - 306+78	30LT - 42LT	BURIED TELEPHONE	CENTURYLINK	X						
RIPLEY ST	306+78 - 309+05	20LT - 30LT	BURIED TELEPHONE	CENTURYLINK				X			
RIPLEY ST	301+26 - 301+28	13LT - 43LT	BURIED TELEPHONE	CENTURYLINK	X						
RIPLEY ST	301+28 - 301+42	12LT - 44LT	BURIED TELEVISION	MEDIACOM	X						
RIPLEY ST	301+28 - 310+78	43LT - 44LT	BURIED TELEVISION	MEDIACOM	X						
RIPLEY ST	306+78 - 309+05	43LT - 44LT	BURIED TELEVISION	MEDIACOM				X			

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
EXISTING UTILITY TABULATION

SHEET 60 OF 239

COMMUNICATIONS (FIBER OPTIC) TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF	
4TH STREET	101+80	245RT - 40LT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
4TH STREET	104+00	24LT	PEDESTAL	NUTEL	X						
4TH STREET	104+00 - 105+57	22LT - 19LT	BURIED FIBER OPTIC	NUTEL	X						
4TH STREET	105+57 - 105+60	22LT - 212LT	BURIED FIBER OPTIC	NUTEL	X						
4TH STREET	105+94 - 105+98	248RT - 207LT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
4TH STREET	116+64	27RT	HANDHOLE	MEDIACOM				X			
4TH STREET	116+64 - 116+66	27RT - 233LT	BURIED FIBER OPTIC	MEDIACOM	X						SUPPORT AT STORM CROSSING
4TH STREET	116+64 - 120+08	27RT - 37RT	BURIED FIBER OPTIC	MEDIACOM	X						
4TH STREET	117+16	41RT	HANDHOLE	MEDIACOM	X						
4TH STREET	117+16 - 117+80	41RT - 45RT	BURIED FIBER OPTIC	MEDIACOM	X						
4TH STREET	117+16	41RT - 233LT	BURIED FIBER OPTIC	MEDIACOM	X						SUPPORT AT STORM CROSSING
4TH STREET	119+79 - 120+08	37RT - 71RT	BURIED FIBER OPTIC	MEDIACOM	X						
4TH STREET	120+08	37RT	HANDHOLE	MEDIACOM	X						
4TH STREET	120+08 - 121+67	30RT - 37RT	BURIED FIBER OPTIC	MEDIACOM	X						SUPPORT AT STORM CROSSING
T.H. 12/22	4+30	198RT - 181LT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
T.H. 12/22	4+30	198RT	PEDESTAL	MEDIACOM	X						
T.H. 12/22	4+35 - 5+19	198RT - 192RT	BURIED TELEVISION	MEDIACOM	X						
T.H. 12	10+56 - 12+06	24RT - 25RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						
T.H. 12	12+06 - 12+28	25RT - 34RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						
T.H. 12	12+28 - 12+48	34RT - 50RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
T.H. 12	12+48 - 12+68	50RT - 92RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
T.H. 12	12+68 - 13+52	92RT - 76RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						
T.H. 12	13+52 - 13+72	76RT - 69RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						
T.H. 12	13+72 - 13+96	69RT - 63RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						
T.H. 12	13+96 - 14+55	63RT - 47RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						
T.H. 12	14+55 - 16+20	47RT - 39RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						
T.H. 12	16+20 - 17+14	39RT - 24RT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						
T.H. 12	17+14 - 16+55	24RT - 198LT	BURIED FIBER OPTIC	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
HOLCOMBE AVE	204+37	48RT - 26LT	BURIED FIBER OPTIC	MEEKER COUNTY	X						
HOLCOMBE AVE	204+37 - 204+68	26LT	BURIED FIBER OPTIC	MEEKER COUNTY	X						
T.H. 22	63+14 - 64+54	23RT - 31RT	BURIED FIBER OPTIC	CENTURYLINK	X						SUPPORT AT STORM CROSSING
RIPLEY ST	300+72 - 306+78	42LT - 46LT	BURIED FIBER OPTIC	MEDIACOM	X						
RIPLEY ST	306+78 - 309+05	40LT - 42LT	BURIED FIBER OPTIC	MEDIACOM				X			
RIPLEY ST	300+93 - 301+15	12LT - 1066LT	BURIED FIBER OPTIC	CENTURYLINK	X						

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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
EXISTING UTILITY TABULATION

SHEET 61 OF 239

ELECTRIC TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
4TH STREET	101+09	141RT - 185RT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
4TH STREET	101+09	185RT	POWER POLE	CITY OF LITCHFIELD	X						
4TH STREET	101+78	128LT	POWER POLE	CITY OF LITCHFIELD	X						
4TH STREET	101+78	128LT - 30RT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
4TH STREET	101+78	30RT	POWER POLE	CITY OF LITCHFIELD	X						
4TH STREET	101+78 - 101+65	30RT - 174RT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
4TH STREET	101+65	174RT	POWER POLE	CITY OF LITCHFIELD	X						
4TH STREET	101+65 - 101+57	174RT - 196RT	GUY WIRE	CITY OF LITCHFIELD	X						
4TH STREET	101+65 - 101+64	174RT - 196RT	GUY WIRE	CITY OF LITCHFIELD	X						
4TH STREET	101+78 - 101+77	30RT - 175RT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
4TH STREET	101+77	175RT	POWER POLE	CITY OF LITCHFIELD	X						
4TH STREET	101+77 - 101+71	175RT - 197RT	GUY WIRE	CITY OF LITCHFIELD	X						
4TH STREET	101+77 - 101+79	175RT - 198RT	GUY WIRE	CITY OF LITCHFIELD	X						
4TH STREET	101+46 - 101+78	30RT - 151RT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	101+67 - 101+78	30RT - 205RT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	101+78 - 101+84	30RT - 207RT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	101+78 - 103+21	30RT - 28RT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
4TH STREET	103+21	28RT	LIGHT POLE	CITY OF LITCHFIELD	X						
4TH STREET	103+21 - 103+85	28RT - 48RT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	101+78 - 103+90	30RT - 47RT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	107+66 - 107+68	34RT - 44LT	BURIED POWER	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
4TH STREET	111+35 - 111+37	30RT - 43LT	BURIED POWER	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
4TH STREET	114+91 - 114+95	49RT - 25LT	BURIED POWER	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
4TH STREET	114+95 - 115+05	25LT - 55LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	0+60	150LT - 42LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	0+60 - 2+29	42LT - 43LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	2+29	43LT	UTILITY MANHOLE	CITY OF LITCHFIELD	X						
T.H. 12/22	2+29 - 3+75	43LT - 40LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	3+75	40LT	POWER POLE	CITY OF LITCHFIELD	X						
T.H. 12/22	4+37	196RT	POWER POLE	CITY OF LITCHFIELD	X						
T.H. 12/22	4+37 - 5+09	196RT - 71RT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	4+50	139RT	POWER POLE	CITY OF LITCHFIELD	X						
T.H. 12/22	4+50 - 5+20	140RT - 196RT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
T.H.12	10+55 - 12+29	33RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H.12	12+29 - 12+56	33RT - 67RT	BURIED POWER	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
T.H.12	12+56	67RT	UTILITY MANHOLE	CITY OF LITCHFIELD	X						
T.H.12	11+39	29RT	SERVICE CABINET	CITY OF LITCHFIELD	X						
T.H.12	11+39 - 11+45	29RT - 30RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H.12	11+45	30RT	SERVICE CABINET	CITY OF LITCHFIELD	X						
T.H.12	11+45 - 14+82	30RT - 49RT	BURIED POWER	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
T.H.12	12+47 - 13+61	38RT - 71RT	BURIED POWER	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
T.H.12	13+61 - 14+82	36RT - 71RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H.12	13+65 - 14+82	90RT - 36RT	BURIED POWER	CITY OF LITCHFIELD	X						

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T.H. 12/22 RECONSTRUCTION
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SHEET 62 OF 239

ELECTRIC TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
T.H.12	14+82 - 22+99	27RT - 36RT	BURIED POWER	CITY OF LITCHFIELD				X			
T.H.12	14+82	36RT	POWER POLE	CITY OF LITCHFIELD	X						
T.H.12	14+64	34RT	GUY	CITY OF LITCHFIELD	X						
T.H.12	14+65	40RT	GUY	CITY OF LITCHFIELD	X						
T.H.12	14+82 - 16+40	28RT - 36RT	OVERHEAD POWER	CITY OF LITCHFIELD				X			
T.H.12	16+40	28RT	POWER POLE	CITY OF LITCHFIELD				X			
T.H.12	16+40	25RT	GUY	CITY OF LITCHFIELD				X			
T.H.12	16+40 - 16+49	28RT - 77RT	BURIED POWER	CITY OF LITCHFIELD				X			
T.H.12	16+49	77RT	SERVICE CABINET	CITY OF LITCHFIELD	X						
T.H.12	16+40 - 18+42	25RT - 32RT	OVERHEAD POWER	CITY OF LITCHFIELD				X			
T.H.12	18+42	32RT	POWER POLE	CITY OF LITCHFIELD	X						
T.H.12	18+42 - 20+46	30RT - 32RT	OVERHEAD POWER	CITY OF LITCHFIELD				X			
T.H.12	20+46	30RT	POWER POLE	CITY OF LITCHFIELD				X			
T.H.12	20+46 - 21+17	30RT - 31RT	OVERHEAD POWER	CITY OF LITCHFIELD				X			
T.H.12	21+07	31RT	GUY POLE	CITY OF LITCHFIELD				X			
T.H.12	21+21	32RT	GUY	CITY OF LITCHFIELD				X			
T.H.12	21+21	41RT	GUY	CITY OF LITCHFIELD				X			
T.H.12	21+24	34RT	GUY	CITY OF LITCHFIELD				X			
T.H.12	21+24	29RT	GUY	CITY OF LITCHFIELD				X			
T.H.12	21+26	31RT	GUY	CITY OF LITCHFIELD				X			
T.H.12	21+10	37RT	SERVICE CABINET	CITY OF LITCHFIELD				X			
HOLCOMBE AVE	200+35	18LT	POWER POLE	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	200+35 - 201+07	18LT - 21LT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	201+07 - 201+83	21LT - 23LT	BURIED POWER	CITY OF LITCHFIELD				X			
HOLCOMBE AVE	201+83	23LT	POWER POLE	CITY OF LITCHFIELD				X			
HOLCOMBE AVE	201+83	23LT	UTILITY MANHOLE	CITY OF LITCHFIELD				X			
HOLCOMBE AVE	201+83 - 202+54	23LT - 31LT	BURIED POWER	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	202+54	31LT	SERVICE CABINET	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	201+58	138RT	POWER POLE	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	201+64	138RT	SERVICE CABINET	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	201+68	139RT	SERVICE CABINET	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	201+68 - 202+62	137RT - 139RT	BURIED POWER	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	202+64	91LT	SERVICE CABINET	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	202+63	89LT	SERVICE CABINET	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	202+63 - 202+62	89LT - 137RT	BURIED POWER	CITY OF LITCHFIELD	X						SUPPORT AT STORM CROSSING
HOLCOMBE AVE	202+54 - 204+68	30LT - 31LT	BURIED POWER	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	204+37	27LT	POWER POLE	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	204+37	27LT - 47RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	63+96	52LT - 39LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	63+96 - 65+54	39LT - 36LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	65+54 - 66+04	38LT - 84LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	66+04	84LT	SERVICE CABINET	CITY OF LITCHFIELD	X						
T.H. 22	65+97	52LT	SERVICE CABINET	CITY OF LITCHFIELD	X						

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ELECTRIC TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
T.H. 22	63+96	52LT - 39LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	63+96	38LT	MANHOLE	CITY OF LITCHFIELD	X						
T.H. 22	63+96 - 65+88	44LT - 36LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	65+88	44LT	SERVICE CABINET	CITY OF LITCHFIELD	X						
T.H. 22	65+88 - 68+04	44LT - 42LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	68+04	42LT	UTILITY MANHOLE	CITY OF LITCHFIELD	X						
T.H. 22	68+04 - 68+30	42LT - 45LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	66+54 - 66+48	147LT - 125LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	66+48 - 66+02	125LT - 51LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	66+02 - 66+10	51LT - 44LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	66+10 - 68+30	44LT - 46LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	68+30	45LT	SERVICE CABINET	CITY OF LITCHFIELD	X						
T.H. 22	68+30 - 68+56	45LT - 48LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	68+56 - 68+60	48LT - 44LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	65+27	62RT	SERVICE CABINET	CITY OF LITCHFIELD	X						
T.H. 22	65+27 - 65+54	62RT - 69RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	65+54 - 65+75	69RT - 175RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 22	65+27 - 66+15	53RT - 66RT	BURIED POWER	CITY OF LITCHFIELD	X						
RIPLEY ST	299+33	24RT	POWER POLE	SMMPA	X						
RIPLEY ST	299+33 - 307+51	24RT - 35RT	OVERHEAD TRANSMISSION	SMMPA	X						69kV
RIPLEY ST	307+51	35RT	POWER POLE	SMMPA	X						
RIPLEY ST	307+35	66RT	GUY	SMMPA	X						
RIPLEY ST	307+35	70RT	GUY	SMMPA	X						
RIPLEY ST	307+35	77RT	GUY	SMMPA	X						
RIPLEY ST	307+79	38RT	GUY	SMMPA	X						
RIPLEY ST	307+84	38RT	GUY	SMMPA	X						
RIPLEY ST	307+87	37RT	GUY	SMMPA	X						
RIPLEY ST	307+92	37RT	GUY	SMMPA	X						
RIPLEY ST	307+51 - 309+61	35RT - 437LT	OVERHEAD TRANSMISSION	SMMPA	X						69kV
RIPLEY ST	309+61	437LT	POWER POLE	SMMPA	X						
RIPLEY ST	309+61 - 311+42	437LT - 838LT	OVERHEAD TRANSMISSION	SMMPA	X						69kV
RIPLEY ST	311+42	838LT	POWER POLE	SMMPA	X						
RIPLEY ST	301+28	69LT	POWER POLE	CITY OF LITCHFIELD						X	
RIPLEY ST	308+99	50LT	POWER POLE	CITY OF LITCHFIELD						X	
					X						
RIPLEY ST	299+33 - 301+10	24RT - 60LT	OVERHEAD POWER	MEEKER COOP	X						
RIPLEY ST	301+02	102RT	POWER POLE	MEEKER COOP	X						
RIPLEY ST	301+02 - 301+10	102RT - 60LT	OVERHEAD POWER	MEEKER COOP	X						
RIPLEY ST	301+10	60LT	POWER POLE	MEEKER COOP	X						
RIPLEY ST	301+10 - 301+12	60LT - 264LT	OVERHEAD POWER	MEEKER COOP	X						
RIPLEY ST	301+12	264LT	POWER POLE	MEEKER COOP	X						
RIPLEY ST	301+12 - 301+14	264LT - 469LT	OVERHEAD POWER	MEEKER COOP	X						
RIPLEY ST	301+14	469LT	POWER POLE	MEEKER COOP	X						
RIPLEY ST	301+14 - 301+16	469LT - 673LT	OVERHEAD POWER	MEEKER COOP	X						
RIPLEY ST	301+16	673LT	POWER POLE	MEEKER COOP	X						
RIPLEY ST	301+16 - 301+18	673LT - 877LT	OVERHEAD POWER	MEEKER COOP	X						
RIPLEY ST	301+18	877LT	POWER POLE	MEEKER COOP	X						
RIPLEY ST	301+18 - 301+21	877LT - 1082LT	OVERHEAD POWER	MEEKER COOP	X						
RIPLEY ST	301+21	1082LT	POWER POLE	MEEKER COOP	X						

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	TL
DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
EXISTING UTILITY TABULATION

timla 2/8/2019 pdf-B and W.pltcfg 9:30:33 AM bmi.tbl

STREET LIGHT TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
4TH STREET	105+97	25RT	LIGHT POLE	CITY OF LITCHFIELD	X						
4TH STREET	105+97 - 107+68	25RT - 20RT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	107+68	20RT	UTILITY MANHOLE	CITY OF LITCHFIELD	X						
4TH STREET	107+66 - 107+68	34RT - 20RT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	107+68 - 109+24	20RT - 24RT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	109+24	24RT	LIGHT POLE	CITY OF LITCHFIELD	X						
4TH STREET	111+35 - 111+37	43LT - 21LT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	111+37 - 112+93	21LT - 26LT	BURIED POWER	CITY OF LITCHFIELD	X						
4TH STREET	112+93	26LT	LIGHT POLE	CITY OF LITCHFIELD	X						
4TH STREET	116+68	110LT	LIGHT POLE	CITY OF LITCHFIELD	X						
4TH STREET	116+68 - 117+12	110LT - 22RT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
4TH STREET	117+12	22RT	LIGHT POLE	CITY OF LITCHFIELD	X						
T.H. 12/22	661+68	32RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+57	41LT - 150LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	0+72 - 0+57	29LT - 41LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	0+72	29LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+82	56LT	LIGHT POLE	MEEKER COUNTY	X						
T.H. 12/22	1+24	43RT	LIGHT POLE	MEEKER COUNTY	X						
T.H. 12/22	1+47	42RT	LIGHT POLE	MEEKER COUNTY	X						
T.H. 12/22	1+65	42RT	LIGHT POLE	MEEKER COUNTY	X						
T.H. 12/22	2+11	42RT	LIGHT POLE	MEEKER COUNTY	X						
T.H. 12/22	0+72 - 3+25	29LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	3+25	29LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	3+25 - 4+45	29LT - 34LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+45	34LT	UTILITY MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	2+07	29RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	2+07 - 4+40	27RT - 29RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+40	29RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+45 - 4+52	34LT - 41LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+52	41LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+52 - 4+51	41LT - 222LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	4+45 - 5+12	34LT - 29LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+12	29LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+40 - 4+50	29RT - 39RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+50	39RT	UTILITY MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+50	39RT - 139RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	4+50 - 5+04	40RT - 38RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+02	41RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+04	38RT	UTILITY MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+12 - 6+63	29LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	6+63	29LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR

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S.A.P. 135-117-005

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STREET LIGHT TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
T.H. 12/22	6+63 - 8+04	29LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+04	29LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+04 - 8+92	29LT - 39LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+92	39LT	UTILITY MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+15	29RT	UTILITY MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+15 - 5+85	29RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+85	29RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+85 - 7+29	29RT - 28RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	7+29	28RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	7+29 - 8+81	28RT - 29RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+81	29RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+93	43LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+93 - 9+42	43LT - 144LT	OVERHEAD POWER	CITY OF LITCHFIELD				X			WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+42	144LT	LIGHT POLE	CITY OF LITCHFIELD	X						
T.H. 12/22	8+93 - 9+58	39LT - 29LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+91	38RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+91 - 8+94	38RT - 140RT	BURIED POWER	CITY OF LITCHFIELD				X			WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+94	140RT	LIGHT POLE	CITY OF LITCHFIELD	X						
T.H. 12/22	8+94 - 8+93	140RT - 214RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H. 12/22	8+91 - 9+41	38RT - 40RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+41	40RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+58	29LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+58 - 11+04	29LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	11+04	29LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	11+04 - 12+54	29LT - 37LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+41 - 10+29	31RT - 28RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	10+29	28RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	10+29 - 11+72	28RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	11+72	28RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	11+72 - 12+36	28RT - 39RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	10+60 - 12+36	27LT - 37LT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H.12	10+56 - 11+26	26RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H.12	11+26	26RT	LIGHT POLE	CITY OF LITCHFIELD	X						
T.H.12	11+26 - 12+42	26RT - 34RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	12+42	34RT	HANDHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	12+42 - 12+49	34RT - 46RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	12+45	51RT	LIGHT POLE	CITY OF LITCHFIELD	X						
T.H.12	12+49	46RT	UTILITY MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	12+49 - 12+61	46RT - 65RT	BURIED POWER	CITY OF LITCHFIELD	X						
T.H.12	13+06 - 14+11	28LT - 44LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	14+11	28LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	14+11 - 15+92	28LT - 47LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	15+92	47LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR

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STREET LIGHT TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
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T.H.12	13+71	55RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	13+17 - 14+89	55RT - 33RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	14+89	33RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	14+89 - 16+46	33RT - 23RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	16+46	23RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	16+46 - 18+10	23RT - 27RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	18+10	27RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	18+10 - 18+89	27RT - 26RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	18+89	26RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	16+76	89LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	16+76 - 16+45	89LT - 193LT	BURIED POWER	CITY OF LITCHFIELD				X			WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	17+33	28LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	17+33 - 20+10	28LT - 26LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	20+10	26LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	20+21	40LT	POWER POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	20+21 - 20+98	27LT - 41LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	20+98	27LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	20+98 - 22+40	27LT - 30LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	22+40	30LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	20+46	31RT	POWER POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	20+46 - 21+94	31RT - 26RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H.12	21+94	26RT	LIGHT POLE	CITY OF LITCHFIELD	X						
T.H.12	21+94 - 22+99	26RT - 27RT	BURIED POWER	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	201+83 - 202+54	23LT	BURIED POWER	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	202+54 - 202+60	23LT - 101LT	BURIED POWER	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	202+60	101LT	LIGHT POLE	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	203+28	44LT	LIGHT POLE	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	203+29	25RT	LIGHT POLE	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	203+29 - 203+46	25RT - 23LT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	203+49	23LT	LIGHT POLE	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	203+49 - 204+68	23LT - 25LT	OVERHEAD POWER	CITY OF LITCHFIELD	X						
T.H. 22	63+30	31RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+27 - 63+30	31RT - 28LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+27	28LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+27 - 64+21	28LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	64+21	28LT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	64+21 - 65+18	28LT - 29LT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	65+18	29LT	UTILITY MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	65+18 - 65+37	29LT - 30RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	65+37	30RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	65+57 - 65+39	30RT - 64RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	67+19	34RT	LIGHT POLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	67+19 - 68+06	34RT - 56RT	BURIED POWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR

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STEAM LINE TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
4TH STREET	102+14 - 102+47	24LT - 40LT	STEAM LINE	CITY OF LITCHFIELD					X		
4TH STREET	102+12	1RT	MANHOLE	CITY OF LITCHFIELD					X		
4TH STREET	102+14	24LT - 207RT	STEAM LINE	CITY OF LITCHFIELD					X		
4TH STREET	112+98 - 113+28	59LT - 60LT	STEAM LINE	CITY OF LITCHFIELD						X	
4TH STREET	113+28 - 113+58	60LT - 91LT	STEAM LINE	CITY OF LITCHFIELD						X	
4TH STREET	113+28	60LT	MANHOLE	CITY OF LITCHFIELD						X	
4TH STREET	113+28 - 113+27	60LT - 30RT	STEAM LINE	CITY OF LITCHFIELD					X		
4TH STREET	113+28 - 113+27	30RT - 214RT	STEAM LINE	CITY OF LITCHFIELD						X	
HOLCOMBE AVE	202+54 -202+66	108LT	STEAM LINE	CITY OF LITCHFIELD						X	
HOLCOMBE AVE	202+66 - 203+08	108LT - 8LT	STEAM LINE	CITY OF LITCHFIELD						X	
HOLCOMBE AVE	202+74 - 202+76	21RT - 165RT	STEAM LINE	CITY OF LITCHFIELD						X	
HOLCOMBE AVE	202+47 - 202+76	165RT	STEAM LINE	CITY OF LITCHFIELD						X	
HOLCOMBE AVE	202+43 - 202+75	99RT	STEAM LINE	CITY OF LITCHFIELD						X	
HOLCOMBE AVE	202+74 - 203+08	21RT - 8LT	STEAM LINE	CITY OF LITCHFIELD					X		
HOLCOMBE AVE	203+08 - 204+68	7LT - 8LT	STEAM LINE	CITY OF LITCHFIELD						X	
HOLCOMBE AVE	203+63 - 203+67	8LT - 19LT	STEAM LINE	CITY OF LITCHFIELD					X		
HOLCOMBE AVE	203+67 - 203+66	8LT - 66RT	STEAM LINE	CITY OF LITCHFIELD						X	

WATERMAIN TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
4TH STREET	101+70	37LT	HYDRANT	CITY OF LITCHFIELD	X						
4TH STREET	101+70 - 101+97	37RT - 38RT	WATER MAIN	CITY OF LITCHFIELD	X						
4TH STREET	101+95	38RT	UTILITY VALVE	CITY OF LITCHFIELD	X						
4TH STREET	101+98 - 101+98	40LT - 7RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	101+98	7RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	101+98 - 101+96	7RT - 246RT	WATER MAIN	CITY OF LITCHFIELD	X						
4TH STREET	101+98 - 105+60	12RT - 13RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	103+73	27LT	UTILITY VALVE	CITY OF LITCHFIELD	X						
4TH STREET	105+62 - 105+60	212LT - 8RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	105+60	8RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	105+60	8RT - 18RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	105+60	18RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	105+60 - 105+58	18RT - 250RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	105+60 - 109+35	13RT - 11RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	109+36 - 109+34	239LT - 210RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	109+35 - 109+72	11RT - 10RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	109+72	10RT - 25RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	109+72	12RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	109+72	25RT	HYDRANT	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
EXISTING UTILITY TABULATION

SHEET 68 OF 239

WATERMAIN TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
4TH STREET	109+72 - 113+05	10RT - 11RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	113+06 - 113+05	229LT - 214RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	113+05 - 114+86	11RT - 10RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	114+87 - 114+86	36LT - 10RT	WATER SERVICE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	114+86	9 RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	114+86 - 115+04	10RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	115+04	50RT - 10RT	WATER SERVICE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	115+04 - 116+81	10RT - 11RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	115+10	10RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	116+74 - 116+76	234LT - 218RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	116+77	154RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	116+77 - 116+81	234LT - 11RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	116+81 - 117+59	10RT - 8RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	117+59 - 117+60	8RT - 48RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	116+83	10RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	659+98 - 0+43	13RT - 12RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+42 - 0+43	12RT - 13RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+42	53RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+43 - 0+72	13RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+72	32RT - 13RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+72	29RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+72	32RT	HYDRANT	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+72 - 4+66	13RT - 15RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	1+91 - 1+91	41RT - 15RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	1+91	41RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	1+93 - 1+93	41RT - 15RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	1+93	41RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+67 - 4+65	221RT - 203LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+66	47LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+41 - 4+65	74LT - 75LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+58	74LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+14 - 5+12	30RT - 15RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+66 - 8+97	15RT - 17RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+13	21RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	5+14	30RT	HYDRANT	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+05 - 9+04	214RT - 29RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+04 - 8+97	29RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+97 - 9+04	29RT - 189LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	8+97 - 9+53	17RT - 15RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+05	17RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+54 - 9+53	27RT - 15RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+53	25RT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+54	27RT	HYDRANT	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR

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T.H. 12/22 RECONSTRUCTION
EXISTING UTILITY TABULATION

SHEET 69 OF 239

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WATERMAIN TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
T.H. 12/22	9+53 - 12+79	15RT - 16RT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	68+94 - 68+76	16LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	68+76	16LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	68+83 - 68+78	45LT - 16LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	68+82 - 68+83	49LT - 45LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	68+71 - 68+82	55LT - 49LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	68+72	54LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	68+71	55LT	HYDRANT	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	64+47 - 68+76	13LT - 16LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	64+54	13LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+83 - 64+47	176RT - 4LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+35 - 64+47	11LT - 13LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+70 - 63+69	44LT - 14LT	WATER MAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+69	14LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+68	46LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+74	46LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+70	44LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12	16+00 - 16+32	221LT - 116LT	WATER MAIN	CITY OF LITCHFIELD	X						
T.H. 12	16+32 - 16+71	116LT - 128LT	WATER MAIN	CITY OF LITCHFIELD	X						
T.H. 12	16+34	117LT	UTILITY VALVE	CITY OF LITCHFIELD	X						
T.H. 12	16+71	128LT	UTILITY VALVE	CITY OF LITCHFIELD	X						
T.H. 12	16+32 - 16+43	116LT - 79LT	WATER MAIN	CITY OF LITCHFIELD	X						
T.H. 12	16+20 - 16+43	72LT - 79LT	WATER MAIN	CITY OF LITCHFIELD	X						
T.H. 12	16+20	72LT	HYDRANT	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12	16+22	73LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12	16+43 - 16+50	79LT - 54LT	WATER MAIN	CITY OF LITCHFIELD	X						
T.H. 12	16+50 - 18+18	54LT - 103LT	WATER MAIN	CITY OF LITCHFIELD	X						
T.H. 12	18+18 - 18+30	103LT - 63LT	WATER MAIN	CITY OF LITCHFIELD	X						
T.H. 12	18+20	96LT	UTILITY VALVE	CITY OF LITCHFIELD	X						
T.H. 12	20+41 - 22+95	26LT - 25LT	WATER MAIN	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	201+63 - 204+68	4LT - 10LT	WATER MAIN	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	201+63	8LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
HOLCOMBE AVE	201+73 - 201+82	4LT - 32LT	WATER MAIN	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	201+80	29LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
HOLCOMBE AVE	201+82	32LT	HYDRANT	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
HOLCOMBE AVE	203+01 - 203+03	198LT - 222RT	WATER MAIN	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	203+00	8LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
HOLCOMBE AVE	203+03	36LT	UTILITY VALVE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR

SANITARY SEWER TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
4TH STREET	103+63 - 103+73	40LT - 2RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	103+73	2RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	103+73 - 105+76	2RT - 3RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	105+76	3RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	105+77	439LT	MANHOLE	CITY OF LITCHFIELD	X						
4TH STREET	105+77 - 105+76	439LT - 3RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR

SANITARY SEWER TABULATION

ALIGNMENT	STATION TO STATION	OFFSET (FT)	DESCRIPTION	OWNER	REMARKS						NOTES
					LEAVE AS IS	ADJUST	PROTECT	RELOCATE	REMOVE	LEAVE IN-PLACE / OUT OF SERVICE	
4TH STREET	105+76	3RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	105+76 - 105+74	3RT - 250RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	109+48	441LT	MANHOLE	CITY OF LITCHFIELD	X						
4TH STREET	109+48 - 109+47	460LT - 1LT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	109+47	1LT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	109+47	1LT - 210RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	109+58 - 109+57	239LT - 210RT	FORCEMAIN	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	113+19	441LT	MANHOLE	CITY OF LITCHFIELD	X						
4TH STREET	113+19 - 113+17	441LT - 1RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	113+17	1RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	113+17	1RT - 214RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	113+26	299LT	MANHOLE	CITY OF LITCHFIELD	X						
4TH STREET	113+26 - 113+24	299LT - 13LT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	113+24	13LT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	113+24 - 113+23	13LT - 214RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	116+90	441LT	MANHOLE	CITY OF LITCHFIELD	X						
4TH STREET	116+90 - 116+89	441LT - 1LT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	116+89	1RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	116+89	1RT - 85RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
4TH STREET	116+89	85RT	MANHOLE	CITY OF LITCHFIELD	X						
4TH STREET	116+89 - 117+05	85RT - 95RT	SANITARY SEWER	CITY OF LITCHFIELD	X						
4TH STREET	116+89 - 116+88	85RT - 218RT	SANITARY SEWER	CITY OF LITCHFIELD	X						
T.H. 12/22	657+61	1LT	MANHOLE	CITY OF LITCHFIELD	X						
T.H. 12/22	657+61 - 0+35	1LT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+35	1LT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	0+35 - 4+76	1LT - 0RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+76	0RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+59 - 4+76	138RT - 135RT	SANITARY SEWER	CITY OF LITCHFIELD	X						
T.H. 12/22	4+76	135RT	MANHOLE	CITY OF LITCHFIELD	X						
T.H. 12/22	4+76	135RT - 0RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	4+76 - 9+17	0RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+17	0RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+18 - 9+17	189RT - 0RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+18	189RT	MANHOLE	CITY OF LITCHFIELD	X						
T.H. 12/22	9+17 - 9+18	0LT - 187LT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	9+18	187LT	MANHOLE	CITY OF LITCHFIELD	X						
T.H. 12/22	9+17 - 12+65	0LT - 1LT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12/22	12+65	1LT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+35 - 63+61	0RT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 22	63+61	0RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
T.H. 12	16+64 - 16+10	34LT - 223LT	SANITARY SEWER	CITY OF LITCHFIELD	X						
T.H. 12	16+64	34LT	SANITARY SEWER	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR
HOLCOMBE AVE	202+91 - 204+68	1RT	SANITARY SEWER	CITY OF LITCHFIELD	X						
HOLCOMBE AVE	202+91	1RT	MANHOLE	CITY OF LITCHFIELD					X		WORK TO BE DONE BY PROJECT CONTRACTOR

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S.A.P. 135-010-009
S.A.P. 135-117-005

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SHEET 71 OF 239

JEWITTS CREEK

℄ 4TH STREET
(4TH)

40' T.R.C.

STA. 100+16.38
BEGIN S.P. 4704-89 (4TH STREET)
BEGIN S.A.P. 135-010-008 (4TH STREET)

N. DONNELLY AVE.

N. AUSTIN AVE.

MATCHLINE STA. 106+25

T.O.

50'

100

105

T-BUR

P-BUR

F/O -BUR

F/G -BUR

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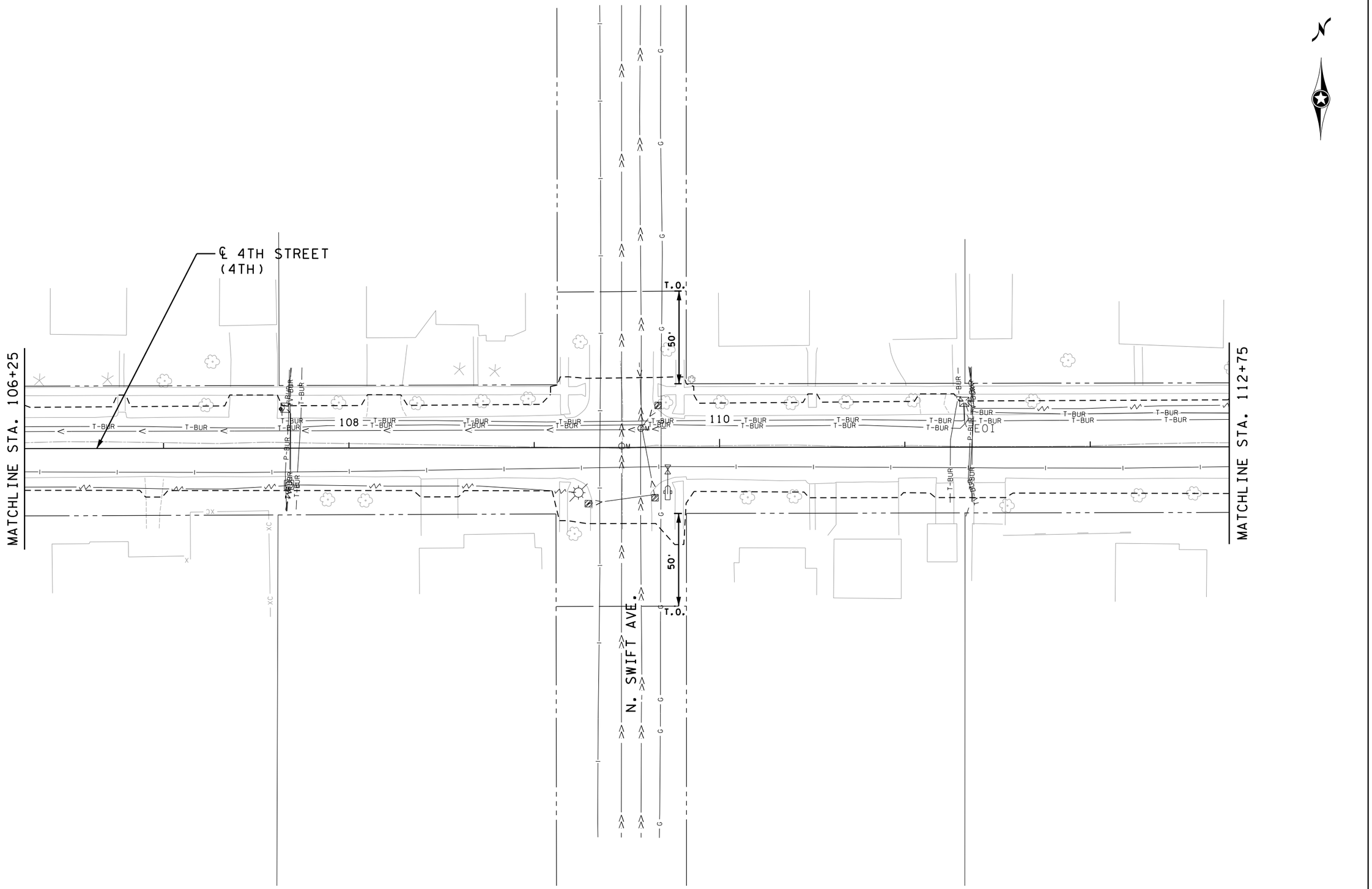
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EXISTING TOPOGRAPHY & UTILITIES PLAN

SHEET 72 OF 239

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SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

BOLTON & MENK
12224 NICOLLET AVENUE
BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burnsville@bolton-menk.com
www.bolton-menk.com

REV.	BY	DATE

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	TL
DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
EXISTING TOPOGRAPHY & UTILITIES PLAN

SHEET 73 OF 239

MATCHLINE STA. 112+75

N. MILLER AVE.

T.O.

50'

EOI

℄ 4TH STREET
(4TH)

T-BUR

G

F/O -BUR

OHP

M

115

119

N. RAMSEY AVE.

MATCHLINE STA. 119+75

THRIVENT FINANCIAL

KENNALILIS
HOME DECOR.

MEEKER
COUNTY
COURTHOUSE

N

0 25 50
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
EXISTING TOPOGRAPHY & UTILITIES PLAN

SHEET 74 OF 239

℄ 4TH STREET
(4TH)

END S.P. 4704-89 (4TH STREET)
END S.A.P 135-010-008 (4TH STREET)
STA. 121+12.66

℄ T.H. 12/22
(TH12_NORTH)

5' T.R.C. PAR. 85

HISTORIC PROPERTY
BOUNDARY

BEGIN S.P. 4704-89 (T.H. 12/22)
BEGIN S.A.P. 135-010-008
(SIBLEY AVE.)
STA. 661+51.07

TRINITY EPISCOPAL CHURCH

3RD STREET

AGAIN & AGAIN TOO
THRIFT STORE
242

MATCHLINE STA. 5+60

660

0

5

STA. EQUATION
T.H. 12/22 (TH12_NORTH) BK 661+69.42=
T.H. 12/22 (TH12_NORTH) AH 0+00.00

MATCHLINE STA. 119+75

MEEKER
COUNTY
COURTHOUSE

SIDEWALK

5' T.R.C. PAR. 84
EXCLUDING LIGHTING

PARKVIEW CAFE
311

REMAX REALTY
309

KINGS WOK
305

FOCUS REALTY (ABND.)
301

ED OLSON INSURANCE
241

ART SPACE
237

HISTORIC DISTRICT
BOUNDARY

T.O.

T-BUR

P-BUR

F/O

SIG-BUR

OHP

G

M

V

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CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
EXISTING TOPOGRAPHY & UTILITIES PLAN

SHEET 75 OF 239

MATCHLINE STA. 5+60

MATCHLINE STA. 12+10

LITCHFIELD CLEANERS 240

SCHAPS AND KLUVER ATTY. 236

KLFD RADIO 234

NATURAL FOOD COOP 230

THE TAVERN ON MAIN 226

CONC. ALLEY

LITCHFIELD AMERICAN LEGION 222

PREMIER REAL ESTATE SERVICES 214

HOLLYWOOD THEATER 210

PRO NAILS 208

VACANT 202

VACANT 134

FALSE WALL

OPEN AREA

CONC.

B.N.T. CUSTOM LEATHERWORKS 130

LILTCHFIELD CHIROPRACTIC 126

LITCHFIELD FOOD SHELF & HEARTLAND COMMUNITY ACTION 120/116

BIT PARKING AREA

CONC. PARKING AREA

FARM BUREAU INS. 112

KELLOGG BARBER SHOP 110

GRAVEL PARKING AREA

℄ T.H. 12/22 (TH12_NORTH)

T.O.

T.O.

T.O.

2ND STREET

SCHAEFER STUDIOS 231

SMITH APPLIANCE 229

MARY'S JEWELRY 227

VACANT 225

VACANT 223

CHAMBER OF COMMERCE 219

INDEPENDENT REVIEW 217

VACANT 215

LARRY'S BARBERSHOP 213

THE ARTISAN 207

PIZZA RANCH 201

LITCHFIELD EYE CENTER 135

POPPY PETAL FLORAL & GIFTS 129

VACANT 127

ALLEY

DeANN'S SHOPPE 119/115

VACANT 113/109

STATE FARM INS. 105

HISTORIC DISTRICT BOUNDARY

SIG-BUR T-BUR TV-BUR OHP G

0 25 50
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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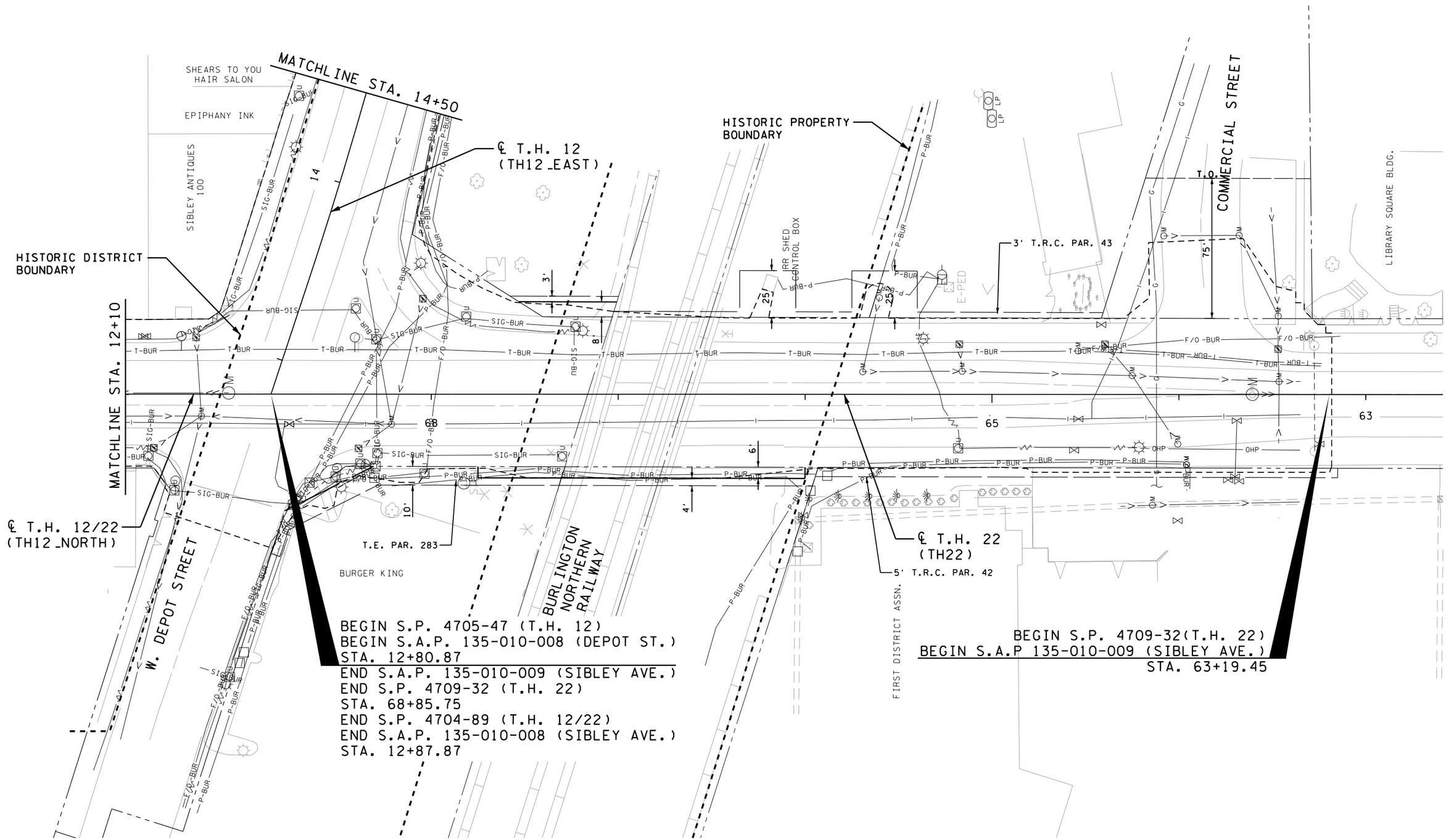
ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
EXISTING TOPOGRAPHY & UTILITIES PLAN

SHEET 76 OF 239

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SCALE FEET

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ANDREW H. KROG
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CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 22
EXISTING TOPOGRAPHY & UTILITIES PLAN

SHEET 77 OF 239

HISTORIC DISTRICT BOUNDARY

HISTORIC PROPERTY BOUNDARY

℄ HOLCOMBE AVE.

N. MARSHALL AVE.

E. 1ST STREET

T.O.

STA. 203+94.95
END S.A.P. 135-117-005
(HOLCOMBE AVE.)

PIERCE INSURANCE AGENCY

WELLS FARGO

SNAP FITNESS

OMOMOM

LANMO FARMS

LAUNDROMAT

10' T.R.C.
PAR. 70

STA. 21+36.33
END S.P. 4705-47 (T.H. 12)
END S.A.P. 135-010-008
(DEPOT ST.)

MATCHLINE STA. 14+50

2' T.E. PAR. 202

7' T.E. PAR. 202

℄ T.H. 12
(TH12_EAST)

STA. 200+36.97
BEGIN S.A.P. 135-117-005
(HOLCOMBE AVE.)

T.O.

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SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12
EXISTING TOPOGRAPHY & UTILITIES PLAN

SHEET 78 OF 239



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S.A.P. 135-010-008
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S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689
DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - POND
EXISTING TOPOGRAPHY & UTILITIES PLAN

SHEET 79 OF 239

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LEGEND

- REMOVE CONCRETE PAVEMENT
- REMOVE PAVEMENT
- REMOVE BITUMINOUS PAVEMENT
- (1) SAWING CONCRETE PAVEMENT (FULL DEPTH)
- (2) SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
- (3) REMOVE DRAINAGE STRUCTURE
- (4) REMOVE AGGREGATE DRIVEWAY (PAID FOR AS COMMON EXCAVATION)
- (5) CONSTRUCT BULKHEAD
- REMOVE CURB & GUTTER
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE CONCRETE WALK
- CLEAR & GRUB TREE
- TREE PROTECTION
- CONSTRUCTION LIMITS
- REMOVE SEWER PIPE (STORM)
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- RAILROAD RIGHT OF WAY
- TEMPORARY EASEMENT

GENERAL NOTES:
SEE WATERMAIN & SANITARY SEWER PLAN FOR CITY OWNED UTILITY REMOVALS.
SEE LIGHTING PLAN FOR INPLACE LIGHTING REMOVALS

℄ 4TH STREET
(4TH)

PROTECT CREEK DURING CONSTRUCTION (INCIDENTAL)

100

105

STA. 100+16.38
BEGIN S.P. 4704-89 (4TH STREET)
BEGIN S.A.P. 135-010-008 (4TH STREET)

JEWITTS CREEK

N. DONNELLY AVE.

N. AUSTIN AVE.

MATCHLINE STA. 106+25

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2/8/2019

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SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	DRAWN	CHECKED
TL	TWB	TL

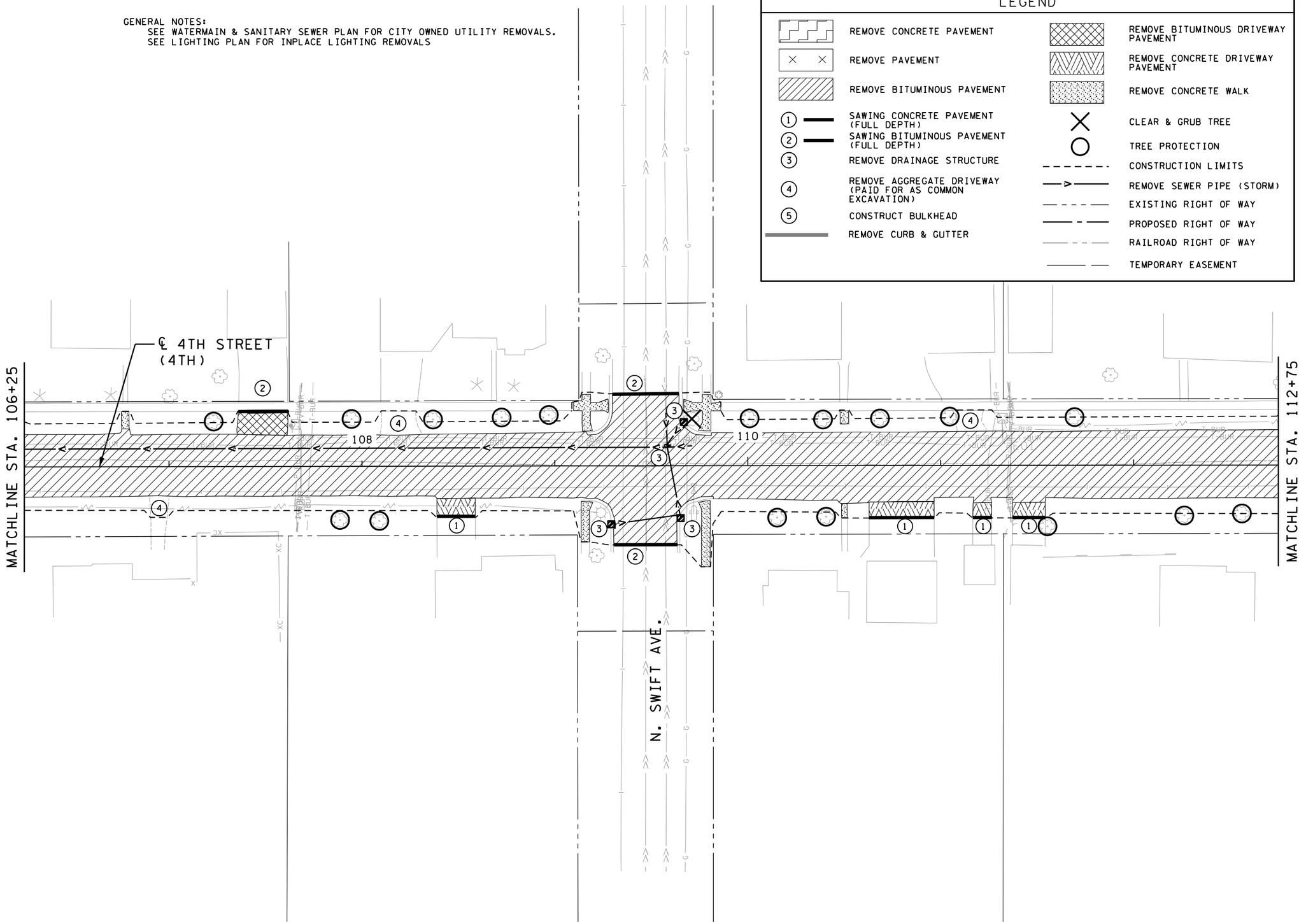
S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
REMOVAL PLAN

SHEET 80 OF 239

GENERAL NOTES:
SEE WATERMAIN & SANITARY SEWER PLAN FOR CITY OWNED UTILITY REMOVALS.
SEE LIGHTING PLAN FOR INPLACE LIGHTING REMOVALS

LEGEND

- REMOVE CONCRETE PAVEMENT
- REMOVE PAVEMENT
- REMOVE BITUMINOUS PAVEMENT
- (1) SAWING CONCRETE PAVEMENT (FULL DEPTH)
- (2) SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
- (3) REMOVE DRAINAGE STRUCTURE
- (4) REMOVE AGGREGATE DRIVEWAY (PAID FOR AS COMMON EXCAVATION)
- (5) CONSTRUCT BULKHEAD
- REMOVE CURB & GUTTER
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE CONCRETE WALK
- CLEAR & GRUB TREE
- TREE PROTECTION
- CONSTRUCTION LIMITS
- REMOVE SEWER PIPE (STORM)
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- RAILROAD RIGHT OF WAY
- TEMPORARY EASEMENT



0 25 50
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	TL
DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
REMOVAL PLAN

SHEET 81 OF 239

timla 2/8/2019 pdf-B and W.pltcfg 9:30:52 AM bmi.tbl

MATCHLINE STA. 112+75

MATCHLINE STA. 119+75

℄ 4TH STREET
(4TH)

REMOVE BUSHES
(INCLUDED IN CLEARING
& GRUBBING)

115

119

THRIVENT FINANCIAL

KENNALILIS
HOME DECOR.

N. MILLER AVE.

N. RAMSEY AVE.

MEEKER
COUNTY
COURTHOUSE

LEGEND

- REMOVE CONCRETE PAVEMENT
- REMOVE PAVEMENT
- REMOVE BITUMINOUS PAVEMENT
- (1) SAWING CONCRETE PAVEMENT (FULL DEPTH)
- (2) SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
- (3) REMOVE DRAINAGE STRUCTURE
- (4) REMOVE AGGREGATE DRIVEWAY (PAID FOR AS COMMON EXCAVATION)
- (5) CONSTRUCT BULKHEAD
- REMOVE CURB & GUTTER
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE CONCRETE WALK
- CLEAR & GRUB TREE
- TREE PROTECTION
- CONSTRUCTION LIMITS
- REMOVE SEWER PIPE (STORM)
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- RAILROAD RIGHT OF WAY
- TEMPORARY EASEMENT

GENERAL NOTES:
SEE WATERMAIN & SANITARY SEWER PLAN FOR CITY OWNED UTILITY REMOVALS.
SEE LIGHTING PLAN FOR INPLACE LIGHTING REMOVALS

0 25 50
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
REMOVAL PLAN

SHEET 82 OF 239

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℄ 4TH STREET
(4TH)

122

END S.P. 4704-89 (4TH STREET)
END S.A.P 135-010-008 (4TH STREET)
STA. 121+12.66

SALVAGE WOOD
POLE (BY OTHERS)

℄ T.H. 12/22
(TH12_NORTH)

REMOVE SIGNAL
SYSTEM B
SEE SHEET 221

3RD STREET

AGAIN & AGAIN TOO
THRIFT STORE
242

TRINITY
EPISCOPAL
CHURCH

BEGIN S.P. 4704-89 (T.H. 12/22)
BEGIN S.A.P. 135-010-008
(SIBLEY AVE.)
STA. 661+51.07

660

0

5

120

MEEKER
COUNTY
COURTHOUSE

SALVAGE
WOOD POLE
(BY OTHERS)

SIDEWALK

PROTECT INPLACE
RETAINING WALL
(INCIDENTAL)

ED OLSON INSURANCE
241

ART SPACE
237

MATCHLINE STA. 5+60

STA. EQUATION
T.H. 12/22 (TH12_NORTH) BK 661+69.42=
T.H. 12/22 (TH12_NORTH) AH 0+00.00

MATCHLINE STA. 119+75

LEGEND

REMOVE CONCRETE PAVEMENT	REMOVE BITUMINOUS DRIVEWAY PAVEMENT
REMOVE PAVEMENT	REMOVE CONCRETE DRIVEWAY PAVEMENT
REMOVE BITUMINOUS PAVEMENT	REMOVE CONCRETE WALK
(1) SAWING CONCRETE PAVEMENT (FULL DEPTH)	CLEAR & GRUB TREE
(2) SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	TREE PROTECTION
(3) REMOVE DRAINAGE STRUCTURE	CONSTRUCTION LIMITS
(4) REMOVE AGGREGATE DRIVEWAY (PAID FOR AS COMMON EXCAVATION)	REMOVE SEWER PIPE (STORM)
(5) CONSTRUCT BULKHEAD	EXISTING RIGHT OF WAY
REMOVE CURB & GUTTER	PROPOSED RIGHT OF WAY
	RAILROAD RIGHT OF WAY
	TEMPORARY EASEMENT

SHEET NOTES:

(6) TREE PROTECTION SHALL BE WITHIN TEMPORARY EASEMENT AND STATE RIGHT OF WAY.

GENERAL NOTES:
SEE WATERMAIN & SANITARY SEWER PLAN FOR CITY OWNED UTILITY REMOVALS.
SEE LIGHTING PLAN FOR INPLACE LIGHTING REMOVALS

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2/8/2019

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SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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REV.	BY	DATE

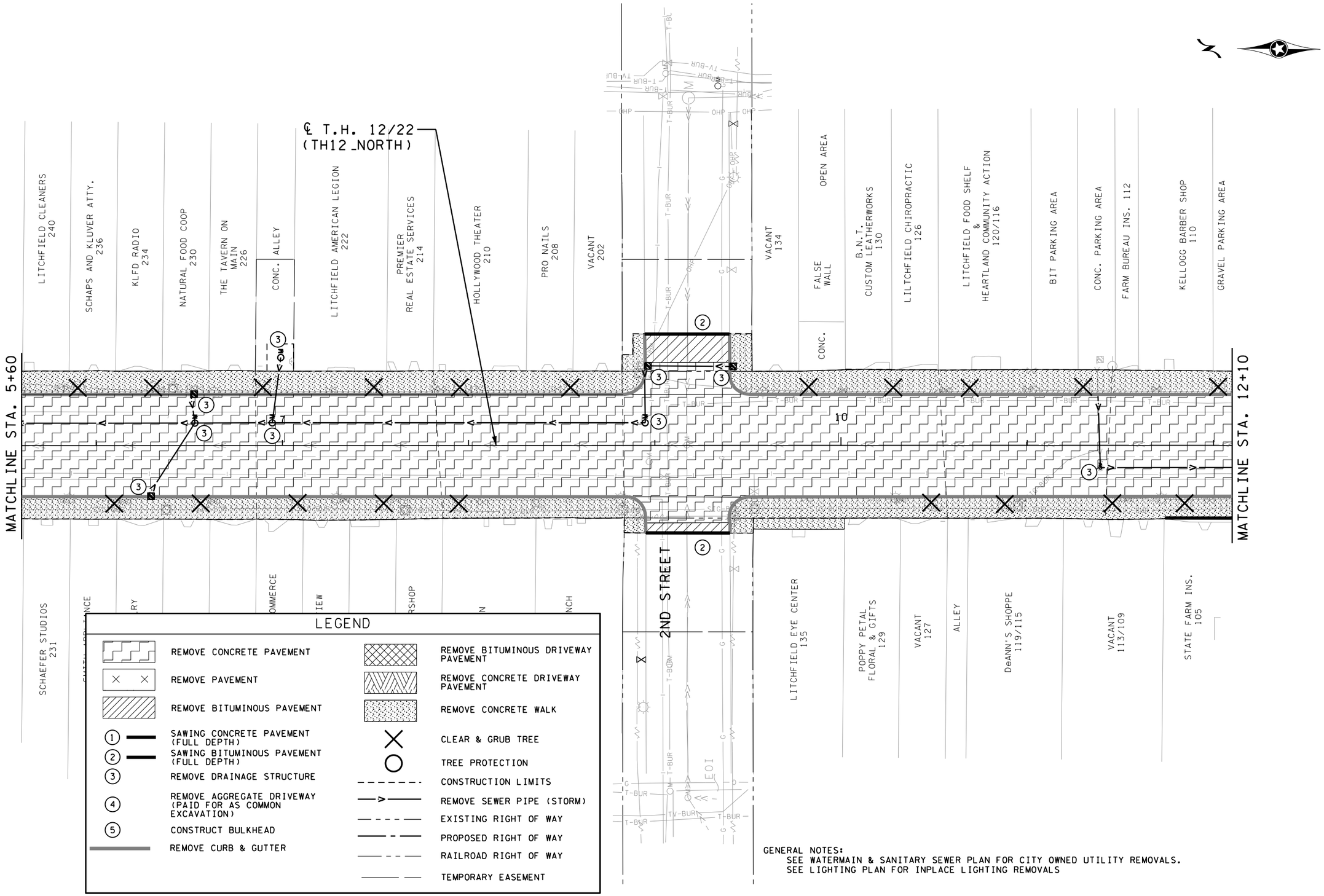
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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
REMOVAL PLAN

SHEET 83 OF 239



GENERAL NOTES:
SEE WATERMAIN & SANITARY SEWER PLAN FOR CITY OWNED UTILITY REMOVALS.
SEE LIGHTING PLAN FOR INPLACE LIGHTING REMOVALS

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2/8/2019

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LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
REMOVAL PLAN

SHEET 84 OF 239

SHEARS TO YOU HAIR SALON

EPIPHANY INK

SIBLEY ANTIQUES 100

MATCHLINE STA. 14+50

℄ T.H. 12 (TH12_EAST)

MATCHLINE STA. 12+10

℄ T.H. 12/22 (TH12_NORTH)

W. DEPOT STREET

REMOVE SIGNAL SYSTEM A. SEE SHEET 212

BURGER KING

BURLINGTON NORTHERN RAILWAY

IRR SHED CONTROL BOX

E-PED

LP

LP

COMMERCIAL STREET

LIBRARY SQUARE BLDG.

FIRST DISTRICT ASSN.

68

65

63

BEGIN S.P. 4705-47 (T.H. 12)
BEGIN S.A.P. 135-010-008 (DEPOT ST.)
STA. 12+80.87
END S.A.P. 135-010-009 (SIBLEY AVE.)
END S.P. 4709-32 (T.H. 22)
STA. 68+85.75
END S.P. 4704-89 (T.H. 12/22)
END S.A.P. 135-010-008 (SIBLEY AVE.)
STA. 12+87.87

BEGIN S.P. 4709-32(T.H. 22)
BEGIN S.A.P 135-010-009 (SIBLEY AVE.)
STA. 63+19.45

℄ T.H. 22

GENERAL NOTES:
SEE WATERMAIN & SANITARY SEWER PLAN FOR CITY OWNED UTILITY REMOVALS.
SEE LIGHTING PLAN FOR INPLACE LIGHTING REMOVALS

LEGEND

- REMOVE CONCRETE PAVEMENT
- REMOVE PAVEMENT
- REMOVE BITUMINOUS PAVEMENT
- (1) SAWING CONCRETE PAVEMENT (FULL DEPTH)
- (2) SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
- (3) REMOVE DRAINAGE STRUCTURE
- (4) REMOVE AGGREGATE DRIVEWAY (PAID FOR AS COMMON EXCAVATION)
- (5) CONSTRUCT BULKHEAD
- REMOVE CURB & GUTTER
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE CONCRETE WALK
- CLEAR & GRUB TREE
- TREE PROTECTION
- CONSTRUCTION LIMITS
- REMOVE SEWER PIPE (STORM)
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- RAILROAD RIGHT OF WAY
- TEMPORARY EASEMENT

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

BOLTON & MENK
12224 NICOLLET AVENUE
BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burnsville@bolton-menk.com
www.bolton-menk.com

REV.	BY	DATE

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 22
REMOVAL PLAN

SHEET 85 OF 239

LEGEND

- REMOVE CONCRETE PAVEMENT
- REMOVE PAVEMENT
- REMOVE BITUMINOUS PAVEMENT
- (1) SAWING CONCRETE PAVEMENT (FULL DEPTH)
- (2) SAWING BITUMINOUS PAVEMENT (FULL DEPTH)
- (3) REMOVE DRAINAGE STRUCTURE
- (4) REMOVE AGGREGATE DRIVEWAY (PAID FOR AS COMMON EXCAVATION)
- (5) CONSTRUCT BULKHEAD
- REMOVE CURB & GUTTER
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE CONCRETE WALK
- CLEAR & GRUB TREE
- TREE PROTECTION
- CONSTRUCTION LIMITS
- REMOVE SEWER PIPE (STORM)
- EXISTING RIGHT OF WAY
- PROPOSED RIGHT OF WAY
- RAILROAD RIGHT OF WAY
- TEMPORARY EASEMENT

GENERAL NOTES:
SEE WATERMAIN & SANITARY SEWER PLAN FOR CITY OWNED UTILITY REMOVALS.
SEE LIGHTING PLAN FOR INPLACE LIGHTING REMOVALS

N. MARSHALL AVE.

N. HOLCOMBE AVE.

E. 1ST STREET

STA. 203+94.95
END S.A.P. 135-117-005
(HOLCOMBE AVE.)

PIERCE INSURANCE AGENCY

WELLS FARGO

SNAP FITNESS

OMOMOM

LANMO FARMS

LAUNDROMAT

PROTECT WOOD POLE (INCIDENTAL)

PROTECT WOOD POLE (INCIDENTAL)

MATCHLINE STA. 14+50

℄ T.H. 12
(TH12_EAST)

STA. 200+36.97
BEGIN S.A.P. 135-117-005
(HOLCOMBE AVE.)

STA. 21+36.33
END S.P. 4705-47 (T.H. 12)
END S.A.P. 135-010-008
(DEPOT ST.)

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12
REMOVAL PLAN

SHEET 86 OF 239

LEGEND

- 3.5" BITUMINOUS PAVEMENT
- 6" BITUMINOUS DRIVEWAY PAVEMENT
- 6" CONCRETE DRIVEWAY PAVEMENT
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- 8" CONCRETE DRIVEWAY PAVEMENT
- 6" CONCRETE WALK
- 4" CONCRETE WALK
- 6" AGGREGATE SURFACING (CV) CL 1
- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY

GENERAL NOTES:
RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.

SEE INTERSECTION DETAILS SHEETS FOR INTERSECTION AND PEDESTRIAN RAMP DETAILS.

SEE CONCRETE PAVING PLAN FOR ROADWAY PAVING INFORMATION.

SEE SHEET 25 & SHEET 42 FOR DRIVEWAY DETAILS.

SEE WATER & SANITARY SEWER PLANS FOR WATERMAIN AND SANITARY SEWER INFORMATION.

℄ 4TH STREET
(4TH)

SEE TURF ESTABLISHMENT PLAN FOR OUTLET STABILIZATION

100
105
12' THRU LANE
12' THRU LANE
12' THRU LANE
12' THRU LANE
4' SHOULDER
4' SHOULDER
1:30
1:30
+16
+36
+18
+38
+15
26'
+77
38' LT
+76
31' RT
R15
R15
R15
R15
MATCHLINE STA. 106+25

JEWITTS CREEK

STA. 100+16.38
BEGIN S.P. 4704-89 (4TH STREET)
BEGIN S.A.P. 135-010-008 (4TH STREET)

N. DONNELLY AVE.

N. AUSTIN AVE.

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SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689
DATE 12-27-2018

DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
CONSTRUCTION PLAN

SHEET 87 OF 239

LEGEND

- 3.5" BITUMINOUS PAVEMENT
- 6" BITUMINOUS DRIVEWAY PAVEMENT
- 6" CONCRETE DRIVEWAY PAVEMENT
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- 8" CONCRETE DRIVEWAY PAVEMENT
- 6" CONCRETE WALK
- 4" CONCRETE WALK
- 6" AGGREGATE SURFACING (CV) CL 1
- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY

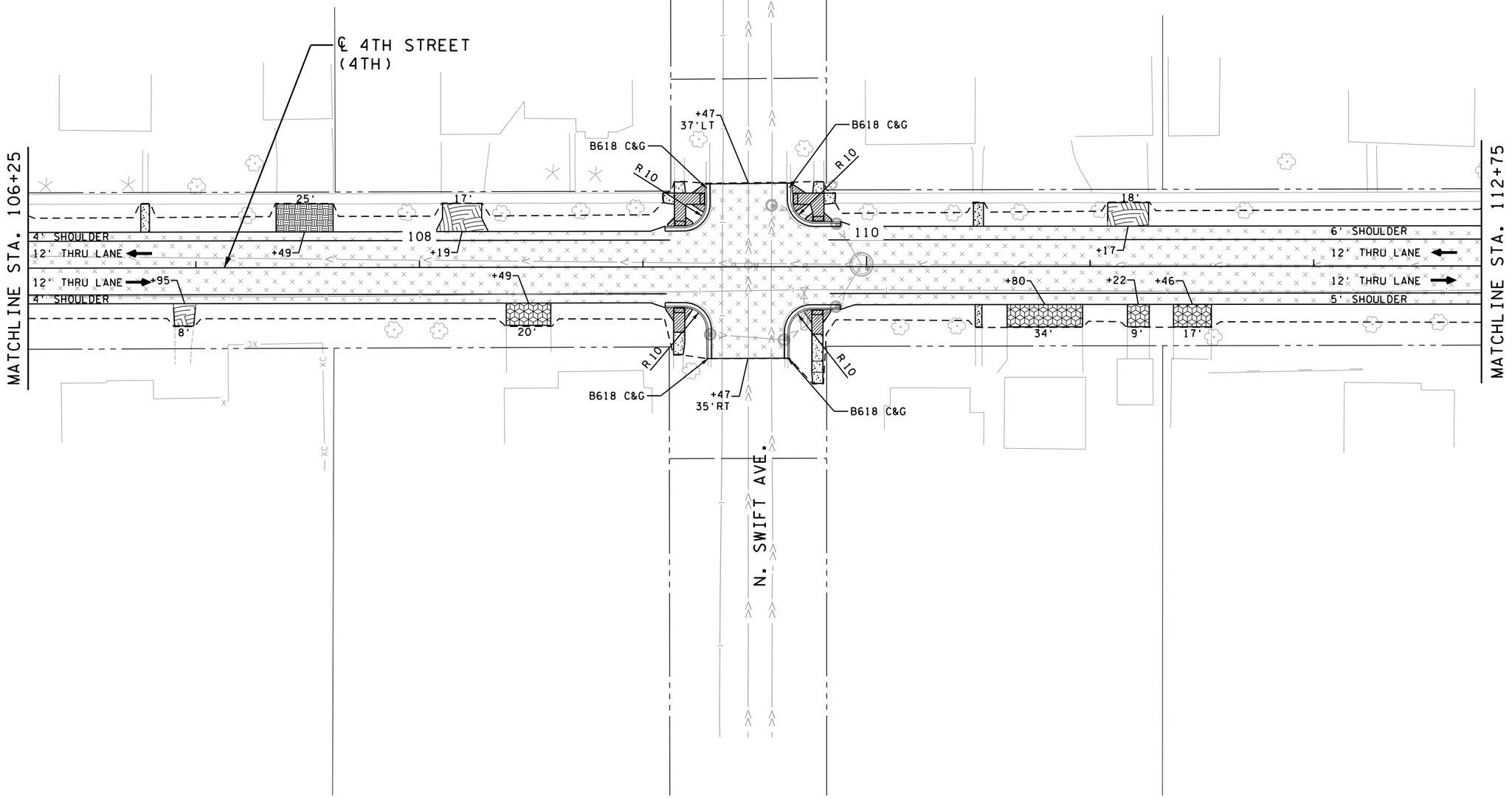
GENERAL NOTES:
RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.

SEE INTERSECTION DETAILS SHEETS FOR INTERSECTION AND PEDESTRIAN RAMP DETAILS.

SEE CONCRETE PAVING PLAN FOR ROADWAY PAVING INFORMATION.

SEE SHEET 25 & SHEET 42 FOR DRIVEWAY DETAILS.

SEE WATER & SANITARY SEWER PLANS FOR WATERMAIN AND SANITARY SEWER INFORMATION.



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SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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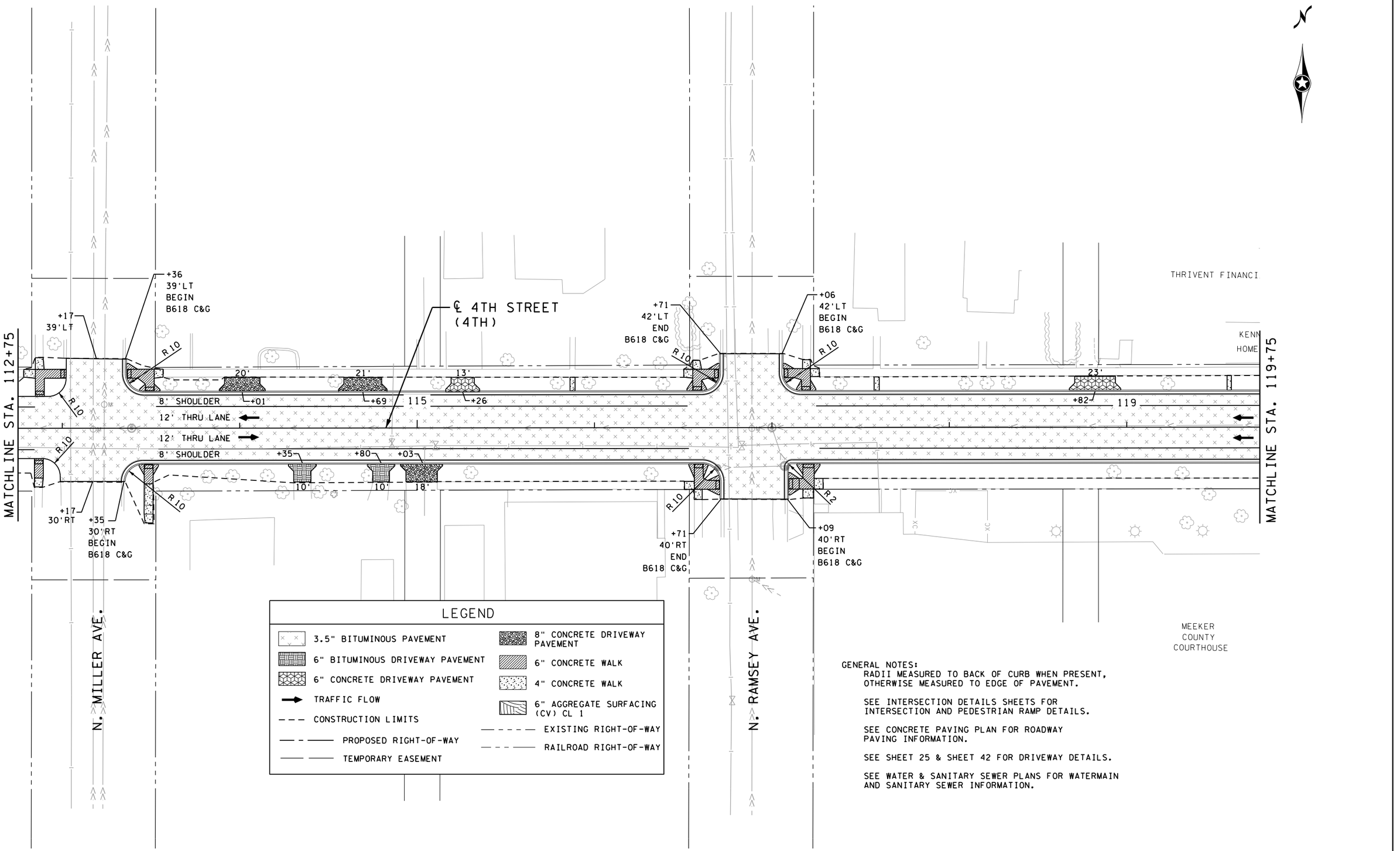
ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	AHK
DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
CONSTRUCTION PLAN

SHEET 88 OF 239

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GENERAL NOTES:
RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.

SEE INTERSECTION DETAILS SHEETS FOR INTERSECTION AND PEDESTRIAN RAMP DETAILS.

SEE CONCRETE PAVING PLAN FOR ROADWAY PAVING INFORMATION.

SEE SHEET 25 & SHEET 42 FOR DRIVEWAY DETAILS.

SEE WATER & SANITARY SEWER PLANS FOR WATERMAIN AND SANITARY SEWER INFORMATION.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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DATE 12-27-2018

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CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
CONSTRUCTION PLAN

SHEET 89 OF 239

℄ 4TH STREET
(4TH)

END S.P. 4704-89 (4TH STREET)
END S.A.P 135-010-008 (4TH STREET)
STA. 121+12.66

BEGIN S.P. 4704-89 (T.H. 12/22)
BEGIN S.A.P. 135-010-008
(SIBLEY AVE.)
STA. 661+51.07

℄ T.H. 12/22
(TH12 _NORTH)

122

TRINITY EPISCOPAL CHURCH

+15
48'LT
END
B624 C&G

+55
48'LT
BEGIN
B624 C&G
WITH CONC.
SILL

INSTALL
WOOD POLE
(BY OTHERS)

R15

+25
END B624 C&G
WITH CONC. SILL
BEGIN B424 C&G
WITH CONC. SILL

PROTECT WOOD POLE
(INCIDENTAL)

+53
62'LT
END
B424 C&G
WITH CONC.
SILL

3RD STREET

AGAIN & AGAIN TOO
THRIFT STORE
242

+99
62'LT
BEGIN
B424 C&G
WITH CONC.
SILL

R20

PC +28
PC +16

8' CONCRETE WALK

660

+51
28'LT
BEGIN
B624 C&G

9' SHLD/PARKING
12' THRU LANE
13' LEFT TURN LANE
12' THRU LANE
9' SHLD/PARKING

5

12' THRU LANE
13' LEFT TURN LANE
12' THRU LANE

MATCHLINE STA. 5+60

+51
28'RT
END
B624 C&G

R15

END
B618
BEGIN
B624

ALLIS DECOR.

8' SHLD

12'

12'

8' SHOULDER

R10

END B618
BEGIN B624
W/CONC. SILL

MEEKER
COUNTY
COURTHOUSE

INSTALL
WOOD POLE
(BY OTHERS)

WALK

CONCRETE WALK (2)

SIDEWALK

PARKVIEW CAFE
311

REMAX REALTY
309

KINGS WOK
301

FUCUS REALTY (ABND.)
301

+52
77'RT
END
B624 C&G
WITH
CONC.
SILL

+03
93'RT
BEGIN
B424 C&G
WITH
CONC.
SILL

ED OLSON INSURANCE
241

ART SPACE
237

MATCHLINE STA. 119+75

GENERAL NOTES:

RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.

SEE INTERSECTION DETAILS SHEETS FOR INTERSECTION AND PEDESTRIAN RAMP DETAILS.

SEE CONCRETE PAVING PLAN FOR ROADWAY PAVING INFORMATION.

SEE SHEET 25 & SHEET 42 FOR DRIVEWAY DETAILS.

SEE WATER & SANITARY SEWER PLANS FOR WATERMAIN AND SANITARY SEWER INFORMATION.

SEE SIGNAL PLANS FOR SIGNAL AT T.H. 12/22 AND 3RD STREET.

SEE ALIGNMENT PLANS AND CONSTRUCTION PROFILES FOR CURB AND SIDEWALK ALIGNMENTS AND PROFILES.

SHEET NOTES:

(1) 1:3 TAPER

(2) WIDTH OF CONCRETE WALK VARIES. (APPROX. 8') CONSTRUCT FROM BACK OF CURB TO BUILDING FACE

(3) CONCRETE CURB & GUTTER TRANSITION. SEE MISCELLANEOUS DETAILS.

LEGEND

- 3.5" BITUMINOUS PAVEMENT
- 6" BITUMINOUS DRIVEWAY PAVEMENT
- 6" CONCRETE DRIVEWAY PAVEMENT
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- 8" CONCRETE DRIVEWAY PAVEMENT
- 6" CONCRETE WALK
- 4" CONCRETE WALK
- 6" AGGREGATE SURFACING (CV) CL 1
- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
CONSTRUCTION PLAN

SHEET 90 OF 239

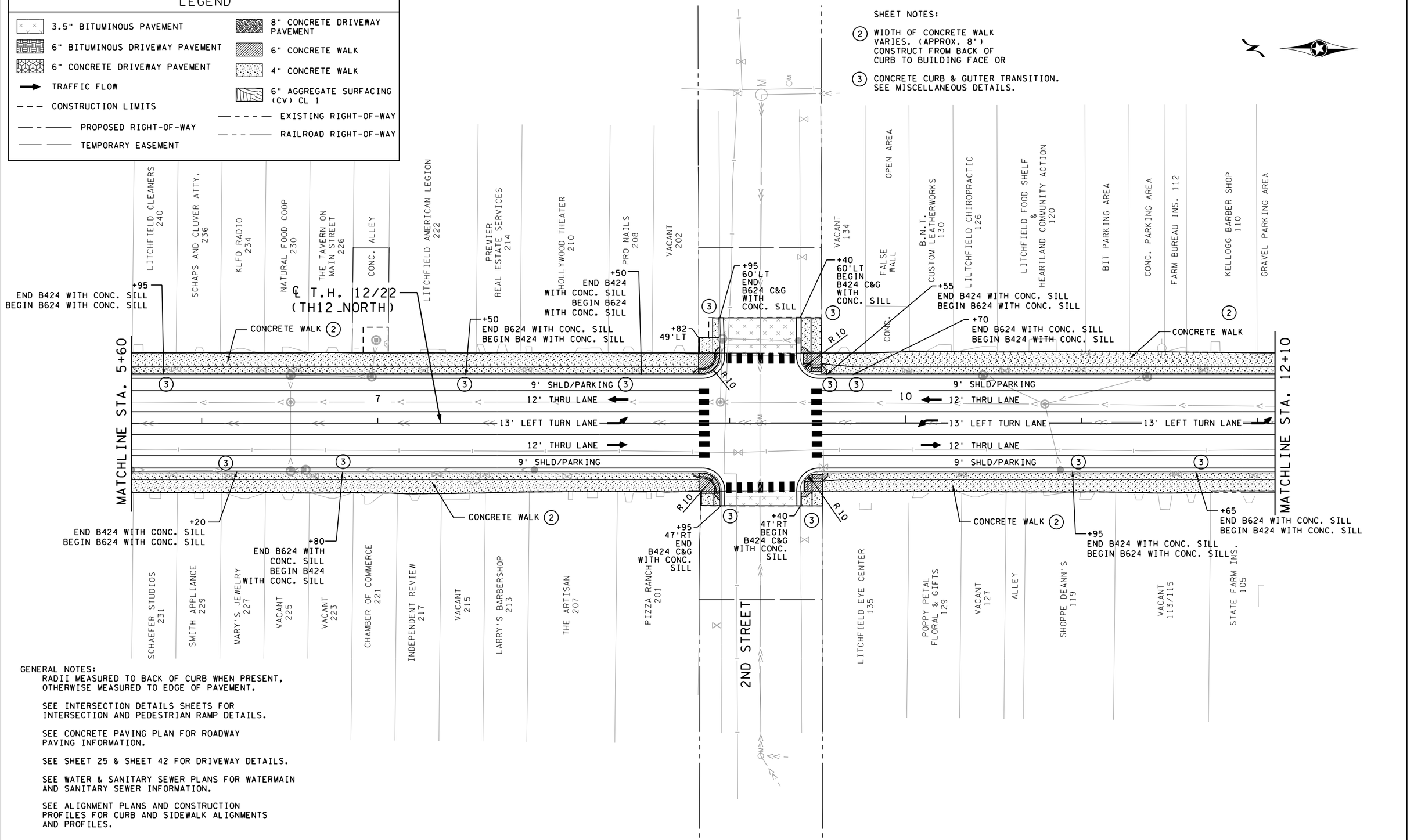
LEGEND

- 3.5" BITUMINOUS PAVEMENT
- 6" BITUMINOUS DRIVEWAY PAVEMENT
- 6" CONCRETE DRIVEWAY PAVEMENT
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- 8" CONCRETE DRIVEWAY PAVEMENT
- 6" CONCRETE WALK
- 4" CONCRETE WALK
- 6" AGGREGATE SURFACING (CV) CL 1
- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY

SHEET NOTES:

(2) WIDTH OF CONCRETE WALK VARIES. (APPROX. 8') CONSTRUCT FROM BACK OF CURB TO BUILDING FACE OR

(3) CONCRETE CURB & GUTTER TRANSITION. SEE MISCELLANEOUS DETAILS.



GENERAL NOTES:

RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.

SEE INTERSECTION DETAILS SHEETS FOR INTERSECTION AND PEDESTRIAN RAMP DETAILS.

SEE CONCRETE PAVING PLAN FOR ROADWAY PAVING INFORMATION.

SEE SHEET 25 & SHEET 42 FOR DRIVEWAY DETAILS.

SEE WATER & SANITARY SEWER PLANS FOR WATERMAIN AND SANITARY SEWER INFORMATION.

SEE ALIGNMENT PLANS AND CONSTRUCTION PROFILES FOR CURB AND SIDEWALK ALIGNMENTS AND PROFILES.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	DRAWN	CHECKED
AHK	TWB	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
CONSTRUCTION PLAN

SHEET 91 OF 239

SHEET NOTES:

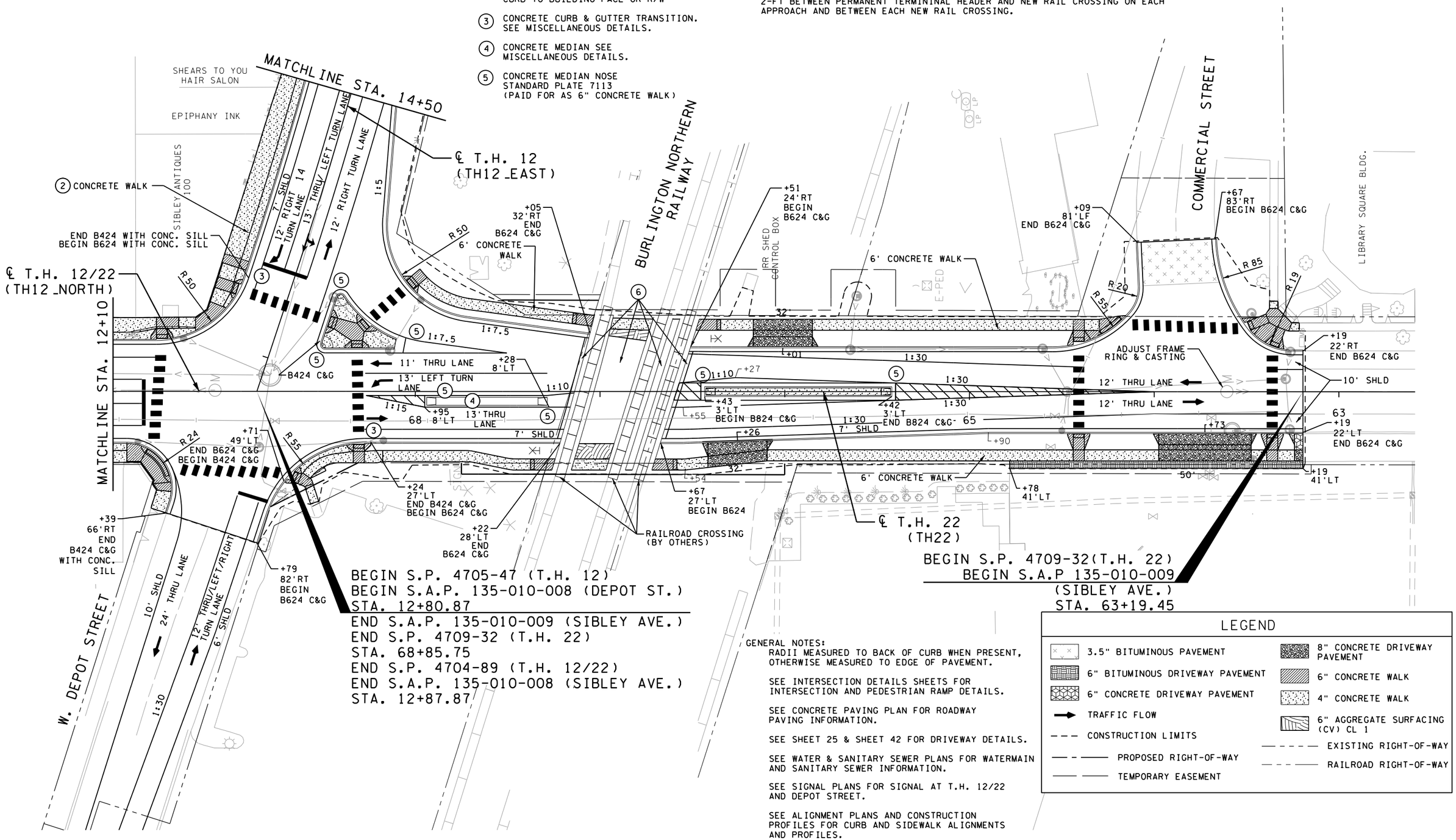
(2) WIDTH OF CONCRETE WALK VARIES. (APPROX. 8') CONSTRUCT FROM BACK OF CURB TO BUILDING FACE OR R/W

(3) CONCRETE CURB & GUTTER TRANSITION. SEE MISCELLANEOUS DETAILS.

(4) CONCRETE MEDIAN SEE MISCELLANEOUS DETAILS.

(5) CONCRETE MEDIAN NOSE STANDARD PLATE 7113 (PAID FOR AS 6" CONCRETE WALK)

(6) PAVEMENT AT RAILROAD CROSSING: 8" TYPE SP 12.5 WEARING COURSE MIX (2,C); OVER 10" AGGREGATE BASE (CV) CLASS 5Q; PLACED 2-FT BETWEEN PERMANENT TERMININAL HEADER AND NEW RAIL CROSSING ON EACH APPROACH AND BETWEEN EACH NEW RAIL CROSSING.



BEGIN S.P. 4705-47 (T.H. 12)
BEGIN S.A.P. 135-010-008 (DEPOT ST.)
STA. 12+80.87
END S.A.P. 135-010-009 (SIBLEY AVE.)
END S.P. 4709-32 (T.H. 22)
STA. 68+85.75
END S.P. 4704-89 (T.H. 12/22)
END S.A.P. 135-010-008 (SIBLEY AVE.)
STA. 12+87.87

BEGIN S.P. 4709-32(T.H. 22)
BEGIN S.A.P 135-010-009 (SIBLEY AVE.)
STA. 63+19.45

GENERAL NOTES:
RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.

SEE INTERSECTION DETAILS SHEETS FOR INTERSECTION AND PEDESTRIAN RAMP DETAILS.

SEE CONCRETE PAVING PLAN FOR ROADWAY PAVING INFORMATION.

SEE SHEET 25 & SHEET 42 FOR DRIVEWAY DETAILS.

SEE WATER & SANITARY SEWER PLANS FOR WATERMAIN AND SANITARY SEWER INFORMATION.

SEE SIGNAL PLANS FOR SIGNAL AT T.H. 12/22 AND DEPOT STREET.

SEE ALIGNMENT PLANS AND CONSTRUCTION PROFILES FOR CURB AND SIDEWALK ALIGNMENTS AND PROFILES.

LEGEND

- 3.5" BITUMINOUS PAVEMENT
- 6" BITUMINOUS DRIVEWAY PAVEMENT
- 6" CONCRETE DRIVEWAY PAVEMENT
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- 8" CONCRETE DRIVEWAY PAVEMENT
- 6" CONCRETE WALK
- 4" CONCRETE WALK
- 6" AGGREGATE SURFACING (CV) CL 1
- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY

0 25 50 SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG LIC. NO. 54689 DATE 12-27-2018

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CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 22
CONSTRUCTION PLAN

SHEET 92 OF 239

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LEGEND

- 3.5" BITUMINOUS PAVEMENT
- 6" BITUMINOUS DRIVEWAY PAVEMENT
- 6" CONCRETE DRIVEWAY PAVEMENT
- TRAFFIC FLOW
- CONSTRUCTION LIMITS
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- 8" CONCRETE DRIVEWAY PAVEMENT
- 6" CONCRETE WALK
- 4" CONCRETE WALK
- 6" AGGREGATE SURFACING (CV) CL 1
- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY

GENERAL NOTES:

RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.

SEE INTERSECTION DETAILS SHEETS FOR INTERSECTION AND PEDESTRIAN RAMP DETAILS.

SEE CONCRETE PAVING PLAN FOR ROADWAY PAVING INFORMATION.

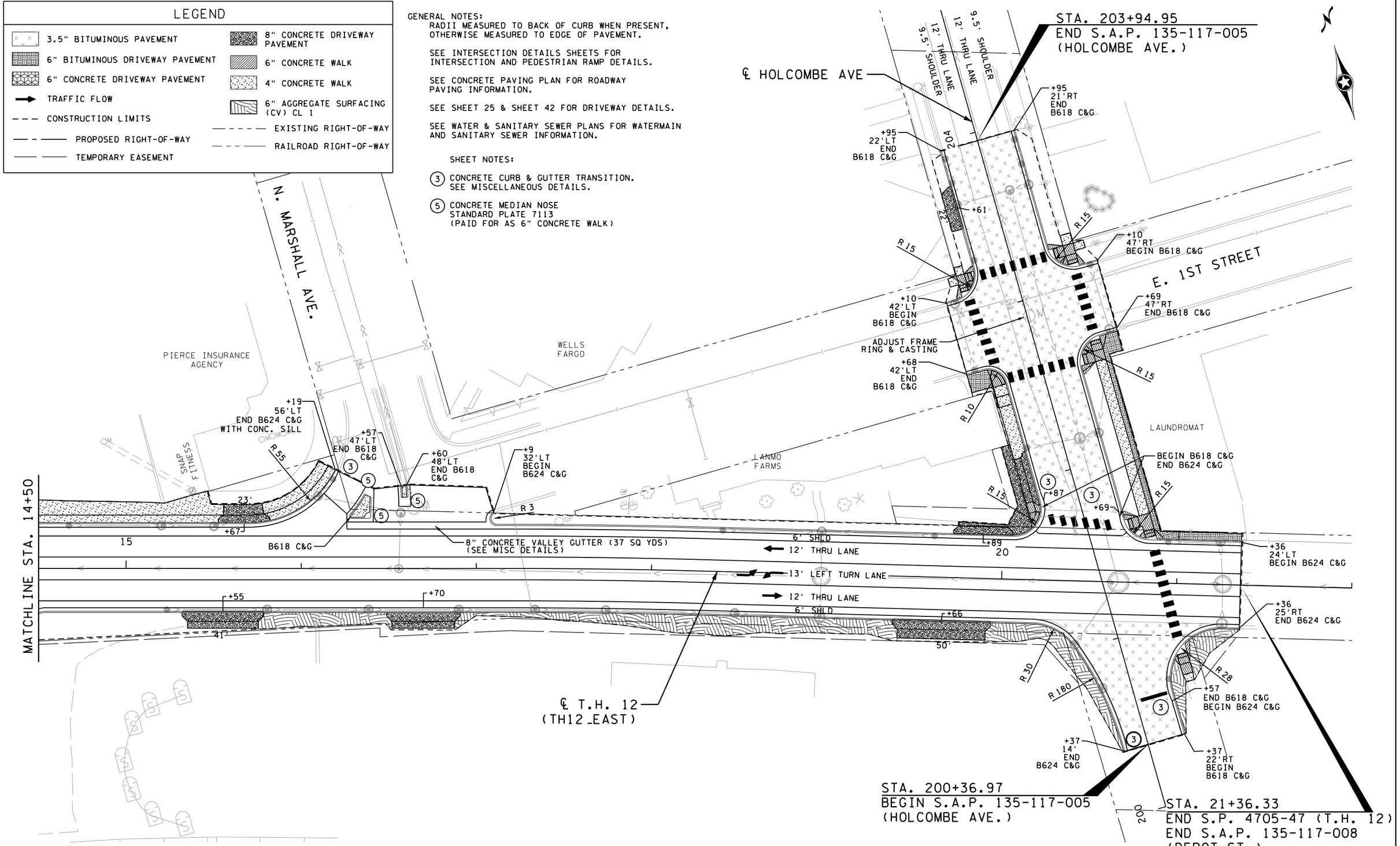
SEE SHEET 25 & SHEET 42 FOR DRIVEWAY DETAILS.

SEE WATER & SANITARY SEWER PLANS FOR WATERMAIN AND SANITARY SEWER INFORMATION.

SHEET NOTES:

(3) CONCRETE CURB & GUTTER TRANSITION. SEE MISCELLANEOUS DETAILS.

(5) CONCRETE MEDIAN NOSE STANDARD PLATE 7113 (PAID FOR AS 6" CONCRETE WALK)



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SCALE 0 25 50 FEET

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S.A.P. 135-010-009
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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

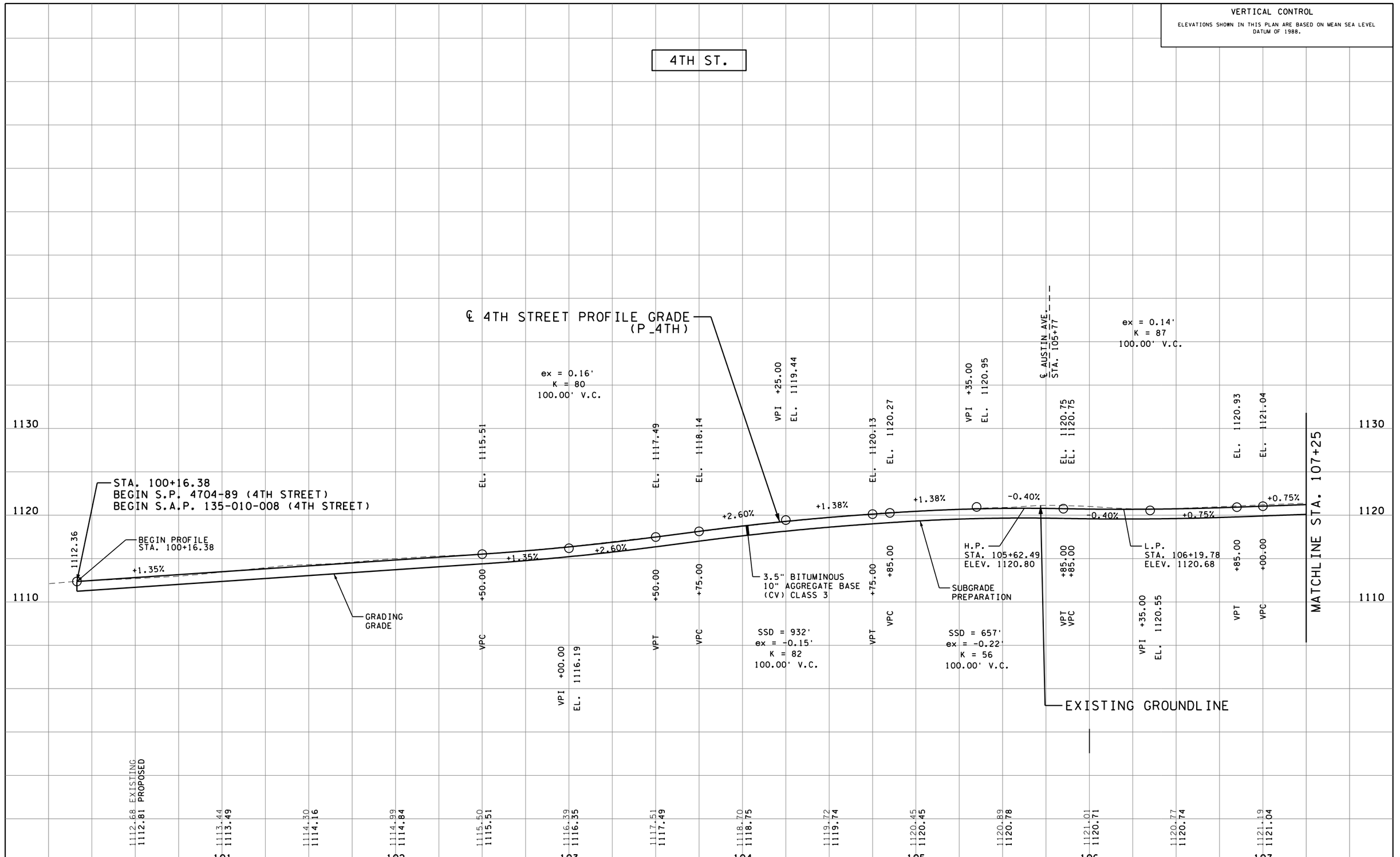
DESIGNED	DRAWN	CHECKED
AHK	TWB	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12
CONSTRUCTION PLAN

SHEET 93 OF 239

VERTICAL CONTROL

ELEVATIONS SHOWN IN THIS PLAN ARE BASED ON MEAN SEA LEVEL DATUM OF 1988.



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2/8/2019

VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

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DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

SHEET 94 OF 239

4TH ST.

MATCHLINE STA. 107+25

MATCHLINE STA. 114+75

℄ 4TH STREET PROFILE GRADE
(P_4TH)

EXISTING GROUNDLINE

3.5" BITUMINOUS
10" AGGREGATE BASE
(CV) CLASS 3

GRADING
GRADE

SUBGRADE
PREPARATION

℄ SWIFT AVE.
STA. 109+47

℄ MILLER AVE.
STA. 113+19

ex = 0.03'
K = 400
100.00' V.C.

SSD = 4366'
ex = -0.03'
K = 400
100.00' V.C.

ex = 0.14'
K = 72
90.00' V.C.

SSD = 908'
ex = -0.14'
K = 72
90.00' V.C.

ex = 0.03'
K = 300
90.00' V.C.

+0.50%
+0.50%
+0.75%
+0.75%
+2.00%
+2.00%
+0.75%
+0.75%
+1.05%

| | | |

4TH ST.

MATCHLINE STA. 114+75

℄ 4TH STREET PROFILE GRADE (P_4TH)

EXISTING GROUNDLINE

ex = 0.06'
K = 200
100.00' V.C.

℄ RAMSEY AVE.
STA. 116+88

℄ T.H. 12 / 22
STA. 120+64.21
ELEV 1128.42

END S.P. 4704-89
(4TH STREET)
END S.A.P 135-010-008
(4TH STREET)
STA. 121+12.66

L.P.
STA. 120+38.70
ELEV. 1128.09
T.H. 12/22 & 4TH ST
SEE INTERSECTION DETAILS

L.P.
STA. 120+89.89
ELEV. 1128.05

H.P.
STA. 117+61.43
ELEV. 1129.84

GRADING GRADE

SUBGRADE PREPARATION

3.5" BITUMINOUS
10" AGGREGATE BASE
(CV) CLASS 3

12" SELECT GRANULAR EMBANKMENT (CV)

8" NON-REINFORCED DOWELED CONCRETE PAVEMENT
6" AGGREGATE BASE (CV) CLASS 5Q

SSD = 2012'
ex = -0.07'
K = 182
100.00' V.C.

SSD = 821'
ex = -0.17'
K = 71
100.00' V.C.

SSD = 1038'
ex = -0.14'
K = 92
100.00' V.C.

| | | |

T.H. 12/22

℄ T.H. 12/22 PROFILE GRADE
(P_TH12_NORTH)

EQUATION:
BK 661+69.420 =
AH 0+00

℄ 4TH ST.
STA. 0+35 R2

℄ 3RD ST.
STA. 4+76 R2

K = 380
150.00' V.C.

BEGIN PROFILE
STA. 661+51.99

H.P.
STA. 5+47.15
ELEV. 1130.98

MATCHLINE STA. 5+90

+0.60% +0.60% +0.39% +0.39% +0.78% +0.78% -0.35%

1:20

SUBGRADE PREPARATION

SSD = 5005'
K = 550
120.00' V.C.

12" SELECT GRANULAR EMBANKMENT (CV)

8" NON-REINFORCED DOWELED CONCRETE PAVEMENT
6" AGGREGATE BASE (CV) CLASS 5Q

GRADING GRADE

SSD = 999'
K = 80
90.00' V.C.

EXISTING GROUNDLINE

BEGIN S.P. 4704-89
(T.H. 12/22)
BEGIN S.A.P. 135-010-008
(SIBLEY AVE.)
STA. 661+51.07

| | | |

T.H. 12/22

END S.P. 4704-89 (T.H. 12/22)
END S.A.P. 135-010-008 (SIBLEY AVE.)
STA. 12+87.87

℄ T.H. 12/22 PROFILE GRADE
(P_TH12_NORTH)

℄ 2ND ST.
STA. 9+17 R2

℄ T.H. 12
STA. 12+80.87 R2

K = 101
90.00' V.C.

SSD = 1033'
K = 291
370.00' V.C.

MATCHLINE STA. 5+90

L.P.
STA. 6+50.52
ELEV. 1130.74

H.P.
STA. 9+16.18
ELEV. 1131.60

-0.35%
+0.54%
+0.54%
-0.73%

1140
1130
1120

EL.	1130.80		1130.88		1131.18				1130.81			
	VPC	+15.00		+60.00		+05.00		+60.00		+30.00		
			VPI	+60.00	EL.	1130.64	VPT		VPC		VPT	
EXISTING	1130.51	1130.39	1130.49	1130.68	1130.93	1131.11	1131.28	1131.20	1130.88	1130.52	1130.29	1130.11	1129.88	1129.70
PROPOSED	1130.85	1130.74	1130.86	1131.12	1131.36	1131.52	1131.59	1131.58	1131.48	1131.29	1131.02	1130.66	1130.30	1129.93
	6		7		8		9		10		11	12

SUBGRADE PREPARATION

12" SELECT GRANULAR EMBANKMENT (CV)

8" NON-REINFORCED DOWELED CONCRETE PAVEMENT
6" AGGREGATE BASE (CV) CLASS 5Q

GRADING GRADE

EXISTING GROUNDLINE

1129.68

VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

SHEET 98 OF 239

T.H. 22

℄ E. COMMERCIAL ST.
STA. 63+87

℄ T.H. 22 PROFILE GRADE
(P_TH22)

BNSF
RAILROAD
CROSSING

STA. 66+58.58

STA. 67+13.77

℄ T.H. 12
STA. 68+85.75

EXISTING
GROUNDLINE

1140

1130

1120

1110

VPI +35.00
EL. 1,128.60
EL. 1,128.62
EL. 1,128.61

VPI +58.38
EL. 1,130.39

VPI +13.53
EL. 1,130.29

EL. 1,129.26

ex = 0.03'
K = 167
60.00' V.C.

EL. 1,129.60

EL. 1,129.93

ex = 0.22'
K = 57
100.00' V.C.

EL. 1,129.45

ex = 0.04'
K = 261
90.00' V.C.

EL. 1,129.97

1,128.52

+0.59%

+0.40%

+0.40%

+0.76%

+0.76%

-1.35%

+0.40%

+0.75%

1:20

1:20

1:20

L.P.
STA. 68+17+.20
ELEV. 1129.41

END PROFILE
STA. 68+85.75

BEGIN PROFILE
STA. 63+19.45

SUBGRADE
PREPARATION

8" NON-REINFORCED DOWELED
CONCRETE PAVEMENT
6" AGGREGATE BASE (CV) CLASS 5Q

GRADING
GRADE

12" SELECT
GRANULAR
EMBANKMENT (CV)

+32.50
+37.50

+95.00
+25.00
+55.00

+40.00
+90.00
+40.00
+85.75
+30.75

VPC
VPT

VPC
VPI
EL. 1,129.38
VPT

VPC
VPI
EL. 1,129.25
VPT
VPI
EL. 1,129.68
VPT

SSD = 5629'
ex = -0.00'
K = 26
5.00' V.C.

1128.68 EXISTING
1128.67 PROPOSED

1128.75
1128.88

1128.73
1129.08

1129.02
1129.28

1129.48
1129.57

1129.94
1129.95

1130.36
1130.33

1130.34
1130.31

1130.08
1129.80

1129.85
1129.43

1129.74
1129.50

1129.68

64

65

66

67

68

69

END S.P. 4709-32 (T.H. 22)
END S.A.P. 135-010-009 (SIBLEY AVE.)
STA. 68+85.75

BEGIN S.P. 4709-32(T.H. 22)
BEGIN S.A.P 135-010-009 (SIBLEY AVE.)
STA. 63+19.45

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VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

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T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

SHEET 99 OF 239

T.H. 12

T.H. 12/22 & DEPOT ST.
SEE INTERSECTION DETAILS

℄ T.H. 12 (NORTH)
STA. 12+81

BEGIN S.P. 4705-47 (T.H. 12)
BEGIN S.A.P. 135-010-008 (DEPOT ST.)
STA. 12+80.87

L.P.
STA. 13+01.993
ELEV. 1129.37

H.P.
STA. 14+15.429
ELEV. 1129.72

℄ T.H. 12 PROFILE GRADE
(P_TH12_EAST)

MATCHLINE STA. 16+75

1140

1130

1120

-1.47%
+0.44%
+0.44%
-0.50%
-0.50%
1:20

VPI +80.87
EL. 1129.68

VPI +01.99
EL. 1129.37

VPC +45.00
EL. 1129.56

VPI +20.00
EL. 1129.89

VPT +95.00
EL. 1129.52

SSD = 1220'
ex = -0.18'
K = 159
150.00' V.C.

GRADING GRADE

12" SELECT GRANULAR EMBANKMENT (CV)

SUBGRADE PREPARATION

EXISTING GROUNDLINE

8" NON-REINFORCED DOWELED CONCRETE PAVEMENT
6" AGGREGATE BASE (CV) CLASS 5Q

	EXISTING	PROPOSED
12	1129.31	1129.39
13	1129.43	1129.42
	1129.33	1129.50
	1129.52	1129.38
14	1129.88	1129.58
	1129.79	1129.71
15	1129.66	1129.68
	1129.49	1129.49
16	1129.14	1129.24
	1128.75	1128.99
	1128.63	1128.74

VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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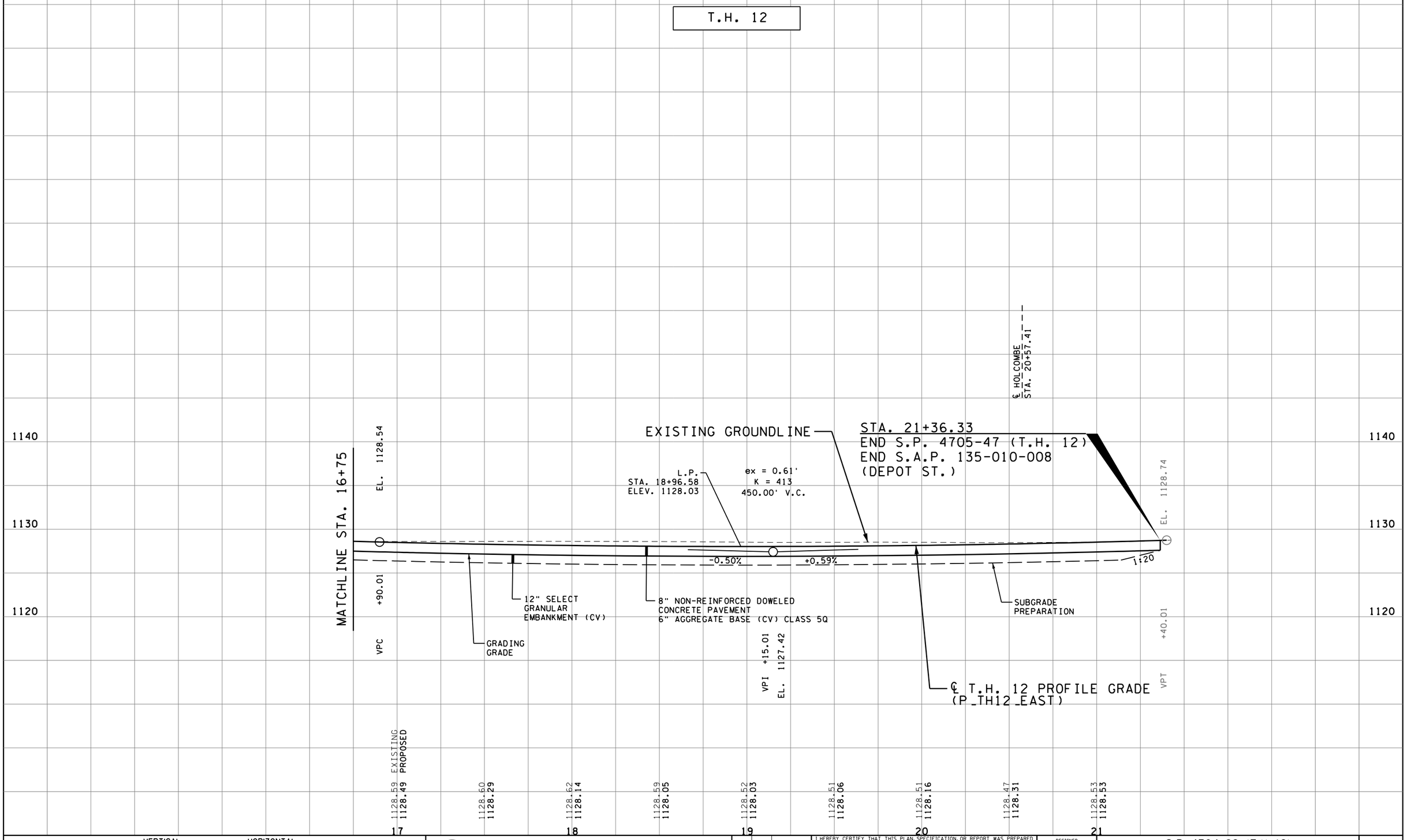
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CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

SHEET 100 OF 239

T.H. 12

℄ HOLCOMBE
STA. 20+57.41



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VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

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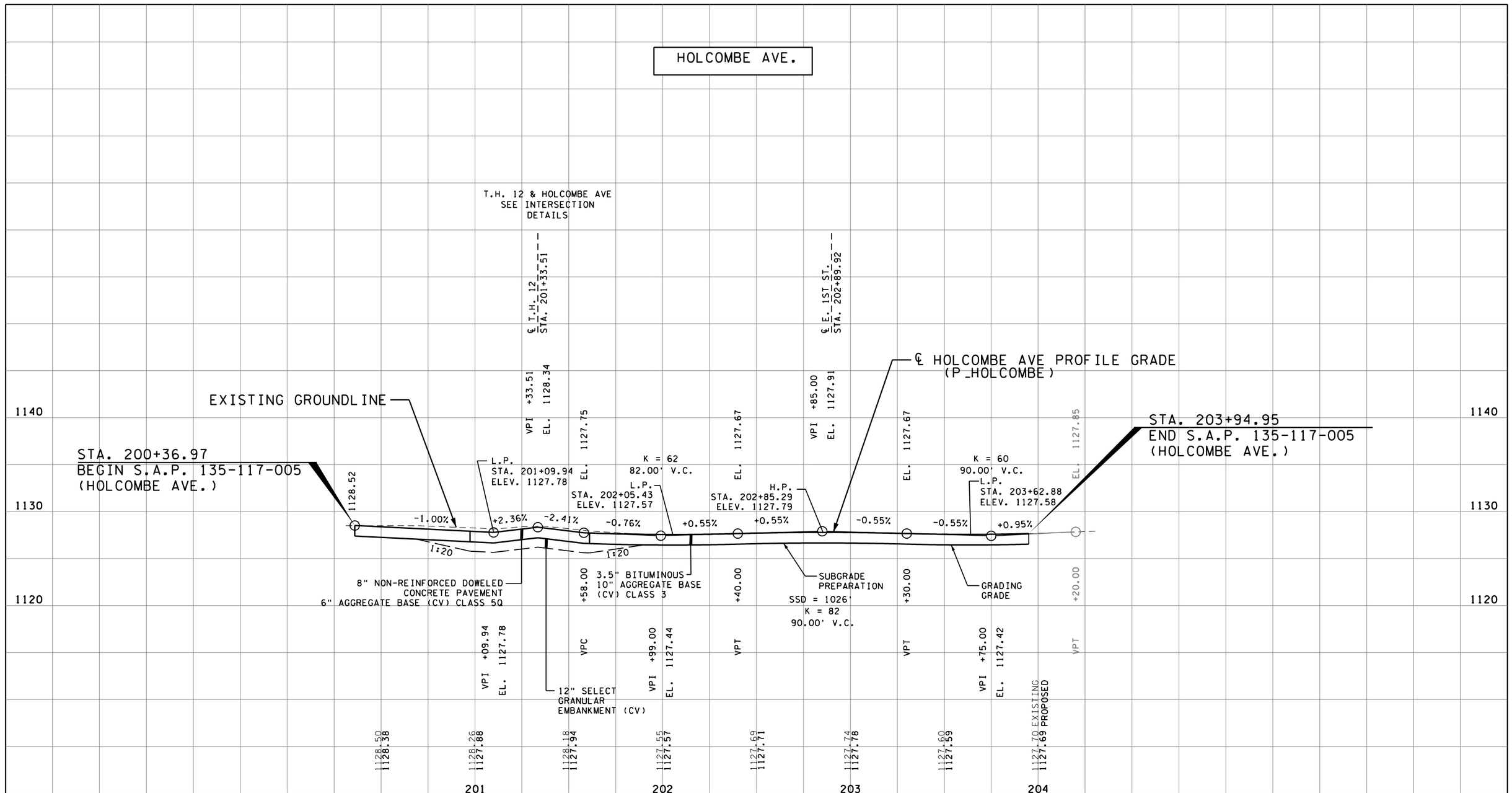
ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	AHK
DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

SHEET 101 OF 239

HOLCOMBE AVE.



VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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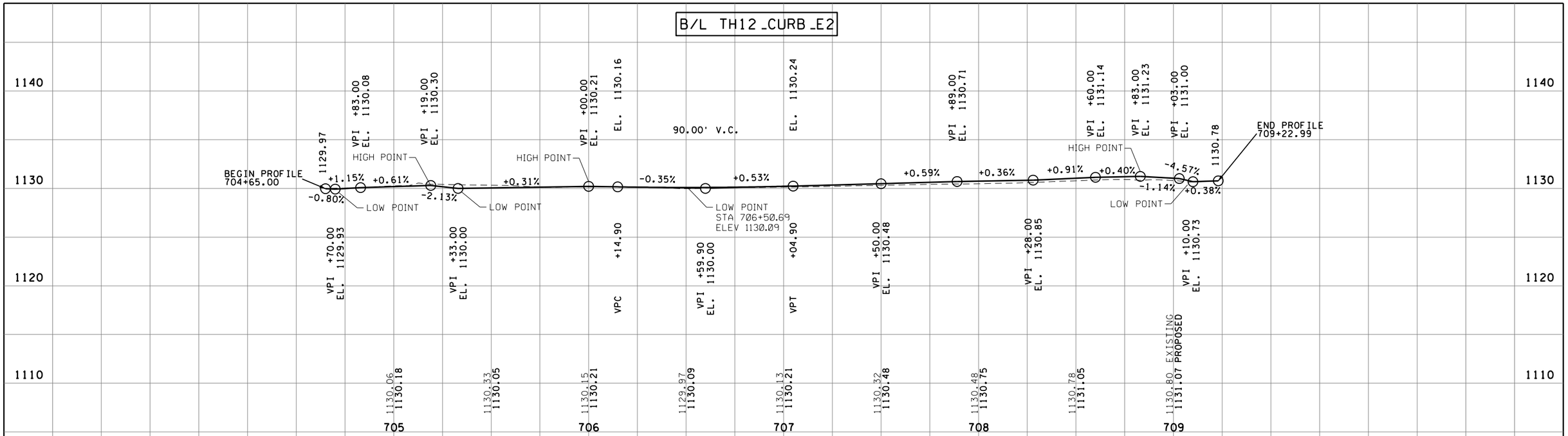
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DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

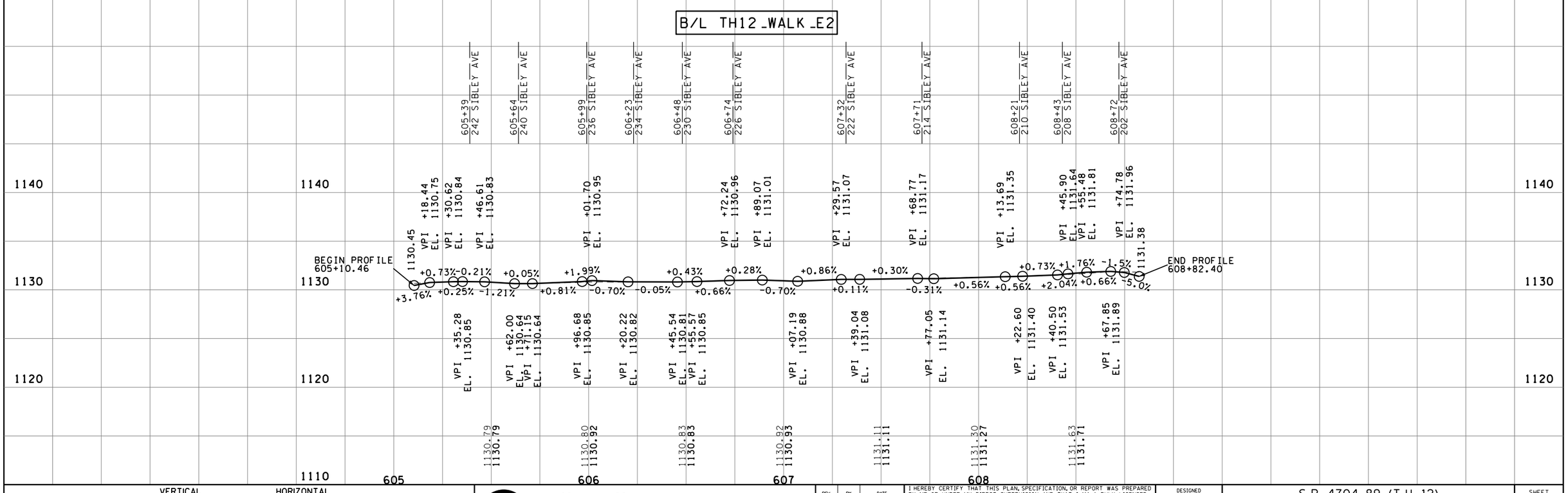
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2/8/2019

B/L TH12_CURB_E2



B/L TH12_WALK_E2



VERTICAL SCALE 0 5 10 FEET

HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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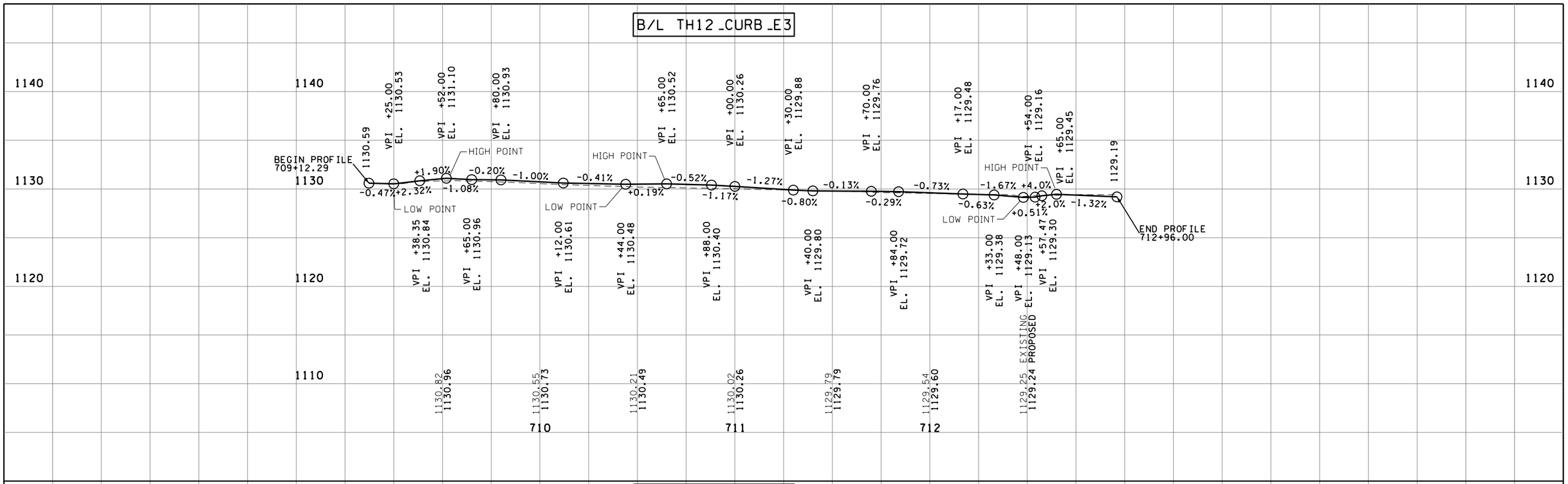
DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

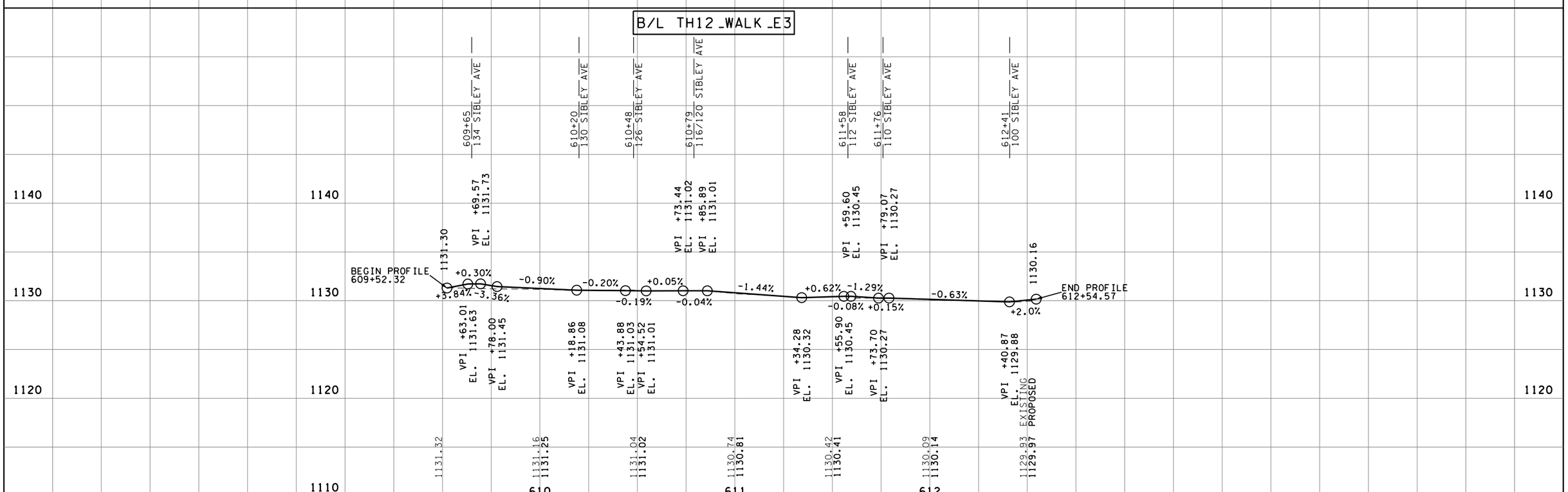
SHEET 103 OF 239

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B/L TH12_CURB_E3



B/L TH12_WALK_E3



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2/8/2019

VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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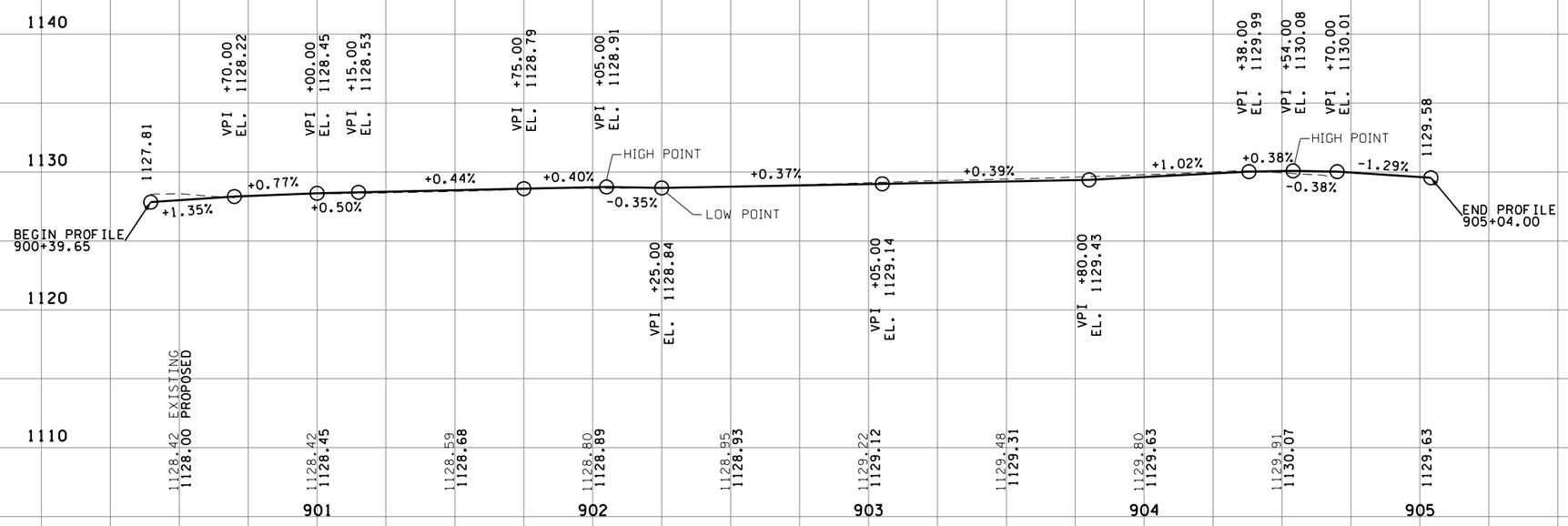
ANDREW H. KROG
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DESIGNED	DRAWN	CHECKED
AHK	TWB	TL

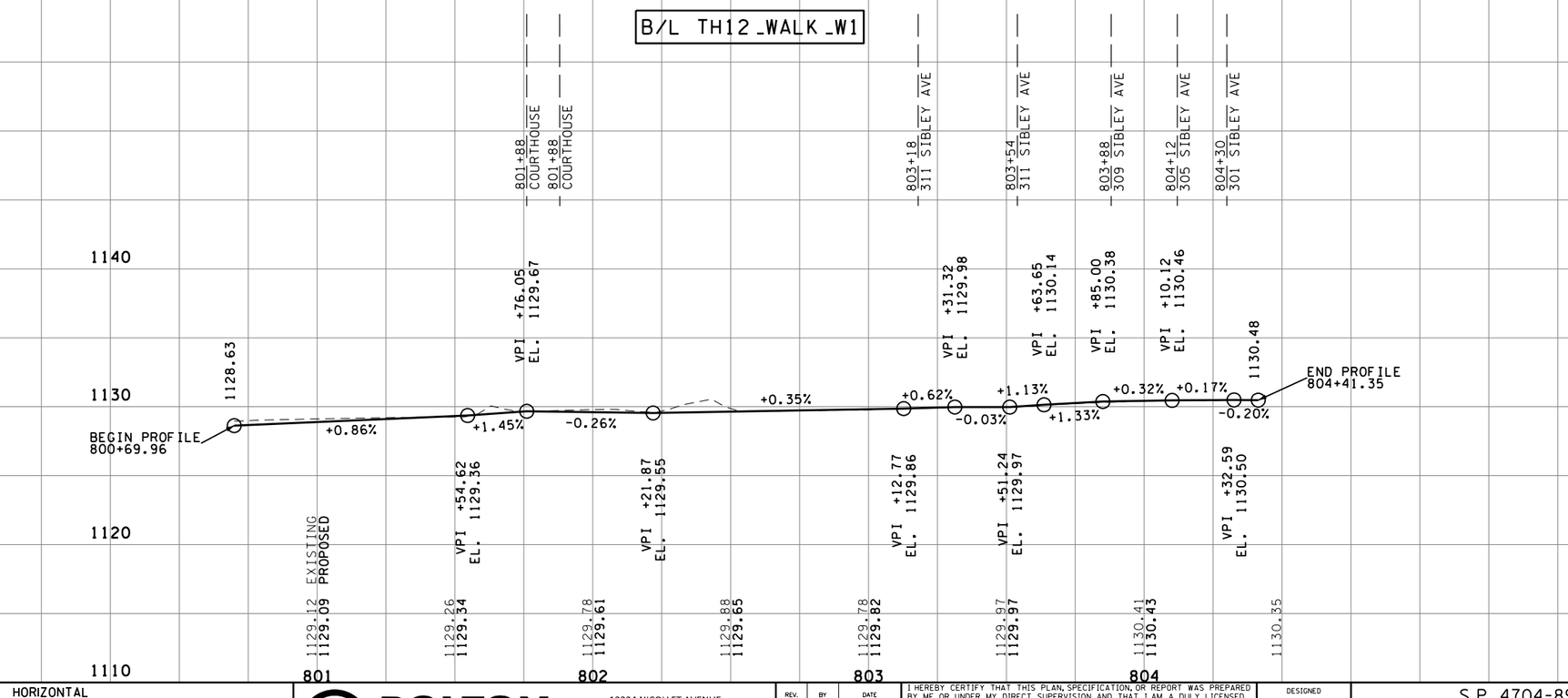
S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

SHEET 104 OF 239

B/L TH12_CURB_W1



B/L TH12_WALK_W1



VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burnsville@bolton-menk.com
www.bolton-menk.com

REV.	BY	DATE

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

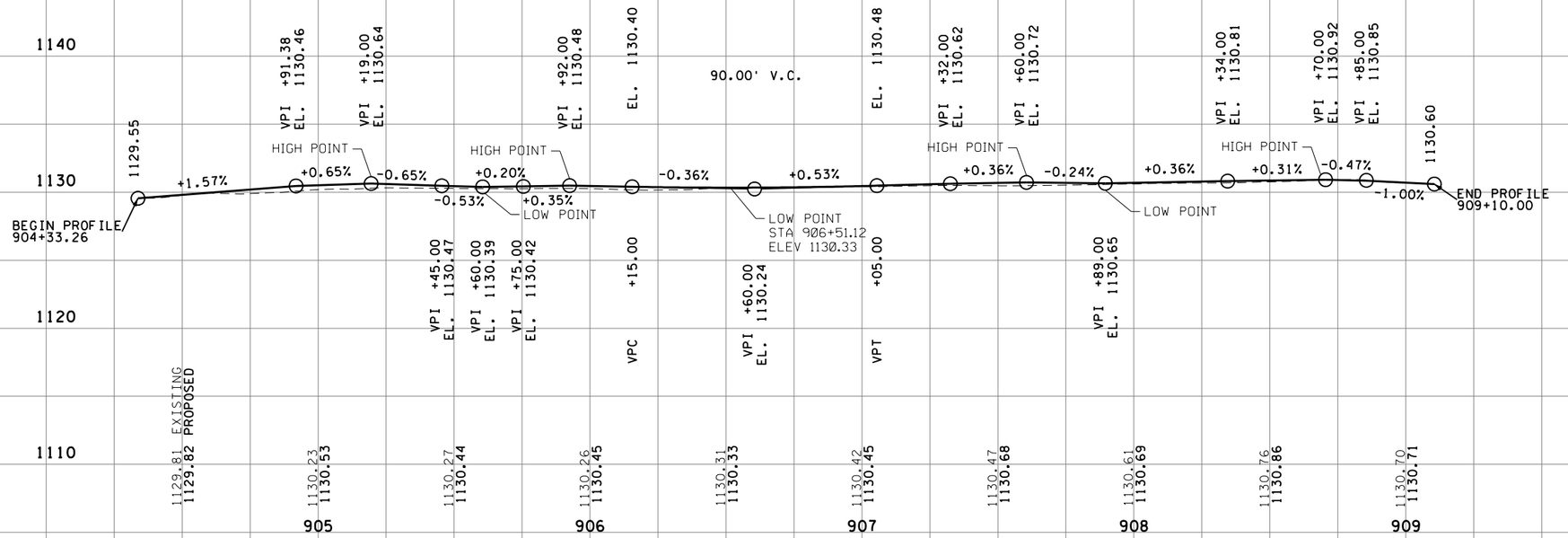
DESIGNED	AHK
DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

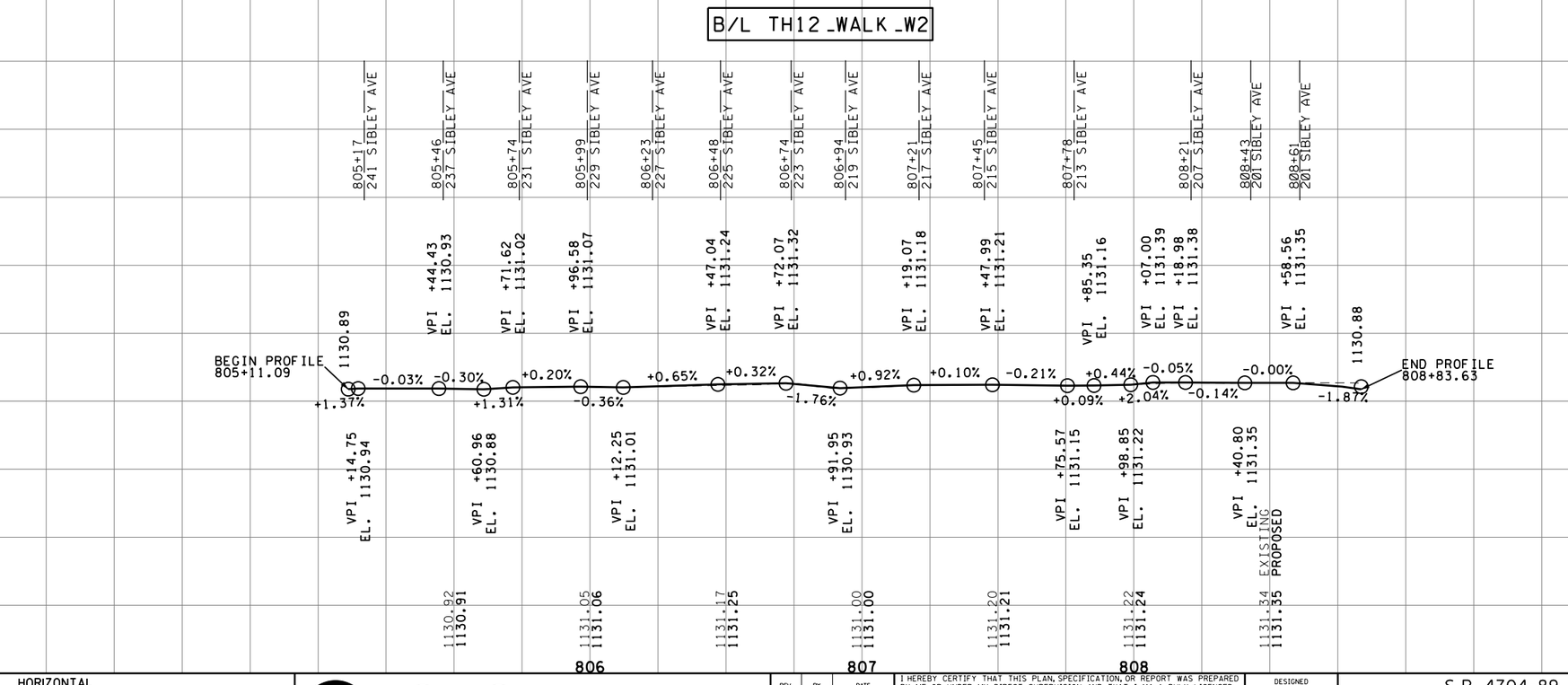
SHEET 105 OF 239

tjmla 2/8/2019 pdf-B and W.pltcfg bmi.tbl 9:31:25 AM

B/L TH12_CURB_W2



B/L TH12_WALK_W2



VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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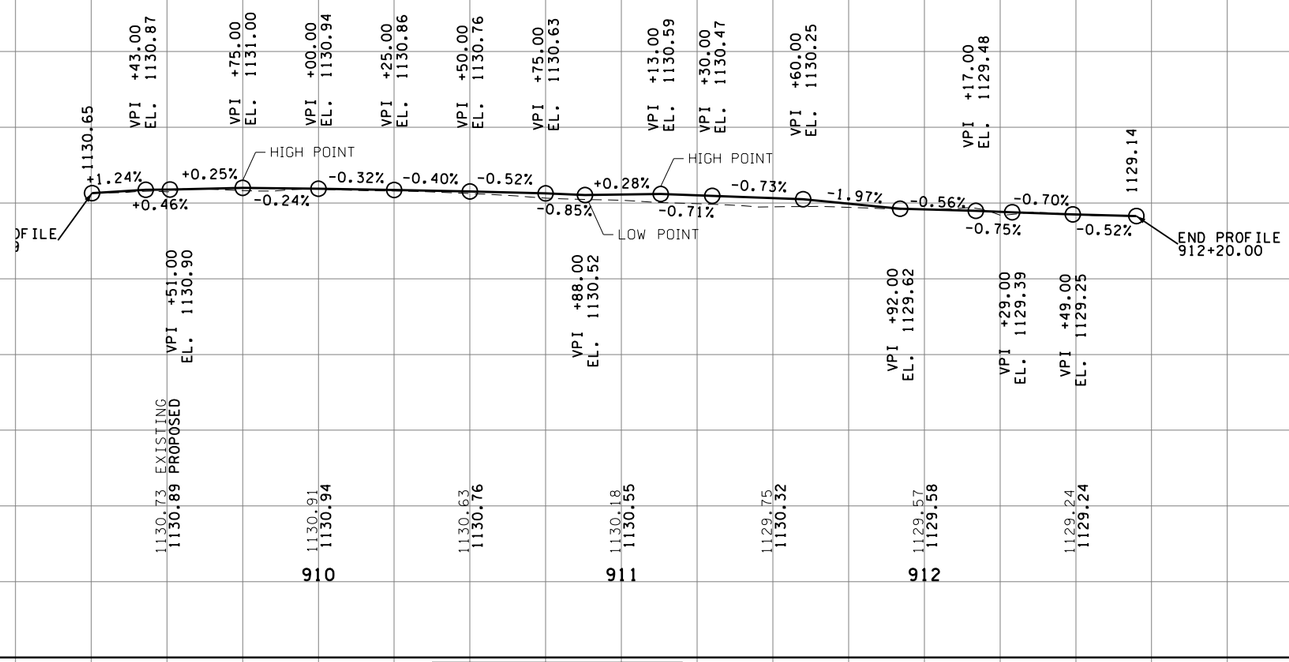
DESIGNED	AHK
DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONSTRUCTION PROFILE

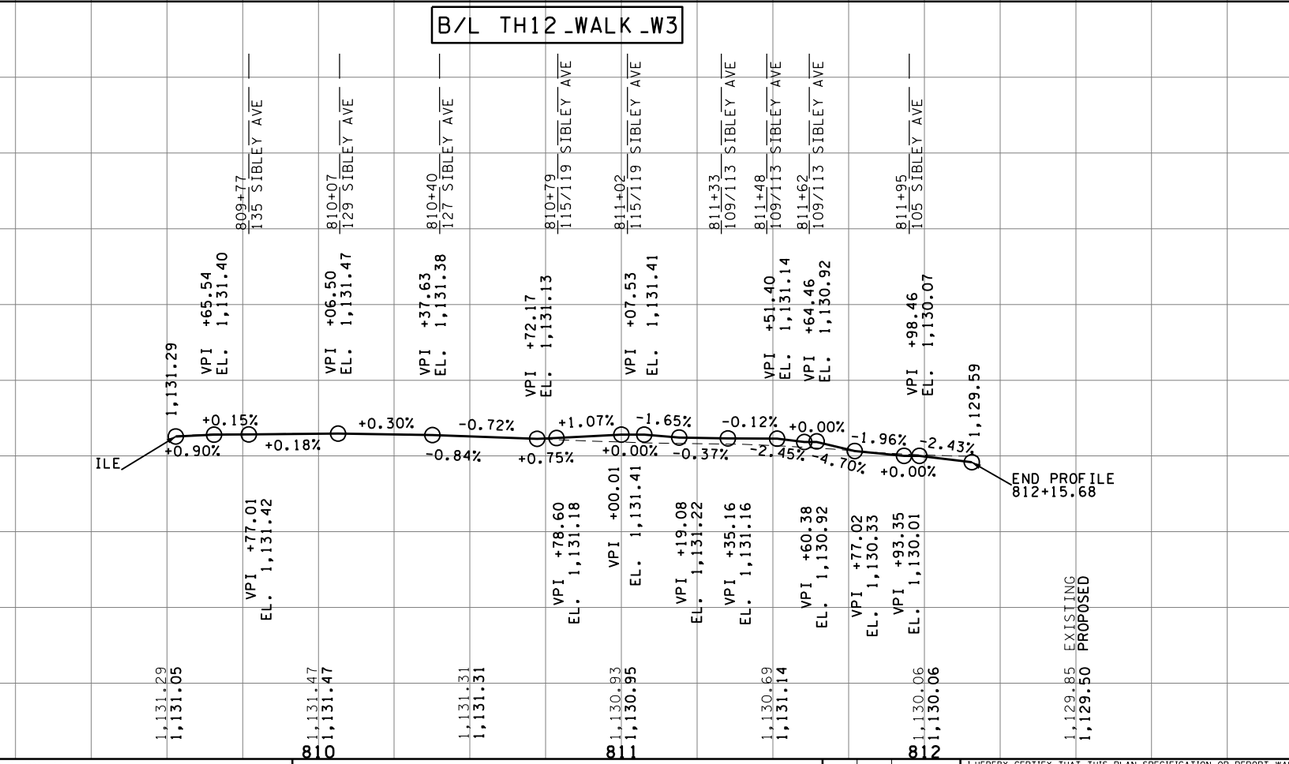
SHEET 106 OF 239

tjmla 2/8/2019 pdf-B and W.pltcfg bmi.tbl 9:31:26 AM

B/L TH12_CURB_W3



B/L TH12_WALK_W3



VERTICAL SCALE 0 5 10 FEET

HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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CONSTRUCTION PROFILE

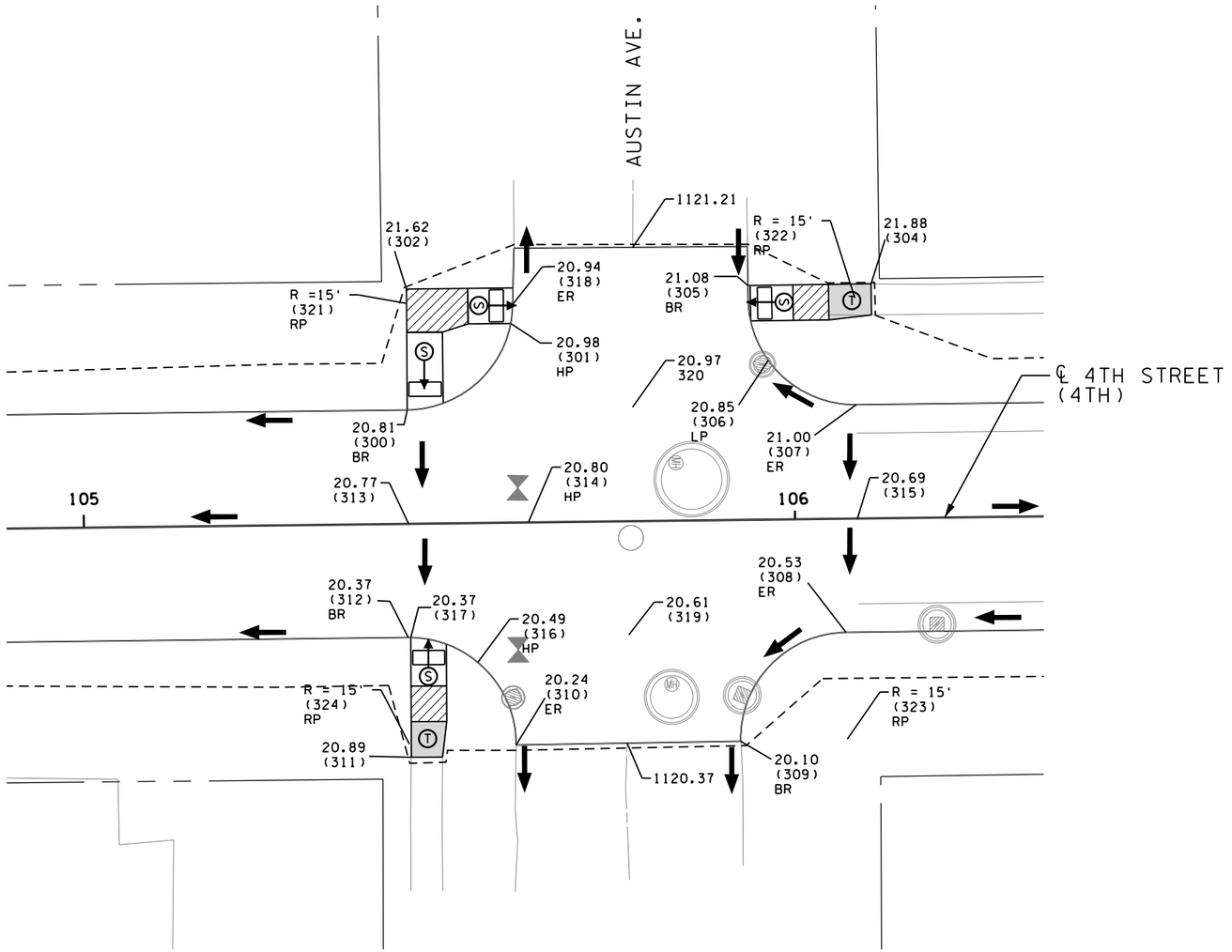
SHEET 107 OF 239

tjmla 2/8/2019 pdf-B and W.pltcfg bmi.tbl 9:31:27 AM

CONTROL POINTS		
POINT NO.	X	Y
300	555746.385	187025.127
301	555760.937	187037.291
302	555746.281	187042.131
304	555811.607	187042.868
305	555794.3	187042.617
306	555797.143	187032.129
307	555809.51	187025.873
308	555808.089	186993.854
309	555793.269	186978.54
310	555761.708	186978.016
311	555746.966	186976.312
312	555746.531	186993.127
313	555746.574	187009.128
314	555763.412	187009.327
315	555809.699	187009.875
316	555756.323	186989.641
317	555746.898	186993.126
318	555761.197	187039.958
319	555777.548	186993.493
320	555778.059	187025.502
321	555746.207	187040.126
322	555809.333	187040.872
323	555808.266	186978.855
324	555746.708	186978.128

NOTE:
BR = BEGIN RADIUS
RP = RADIUS POINT
ER = END RADIUS
HP = HIGH POINT
LP = LOW POINT

RADII MEASURED TO BACK OF CURB WHEN PRESENT,
OTHERWISE MEASURED TO EDGE OF PAVEMENT.



LEGEND

- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- CONSTRUCT CONCRETE CURB & GUTTER
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- DRAINAGE FLOW ARROW
- PEDESTRIAN ACCESS ROUTE

- EL. (XXX) — CONTROL POINT ELEVATION IN 1100' RANGE
- X" — CURB HEIGHT
- CATCH BASIN
- PEDESTRIAN PUSH BUTTON STATION
- LIGHTING UNIT
- HANDHOLE
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS

- (S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
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0 10 20
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED	AHK
DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
INTERSECTION DETAILS & ADA PLANS

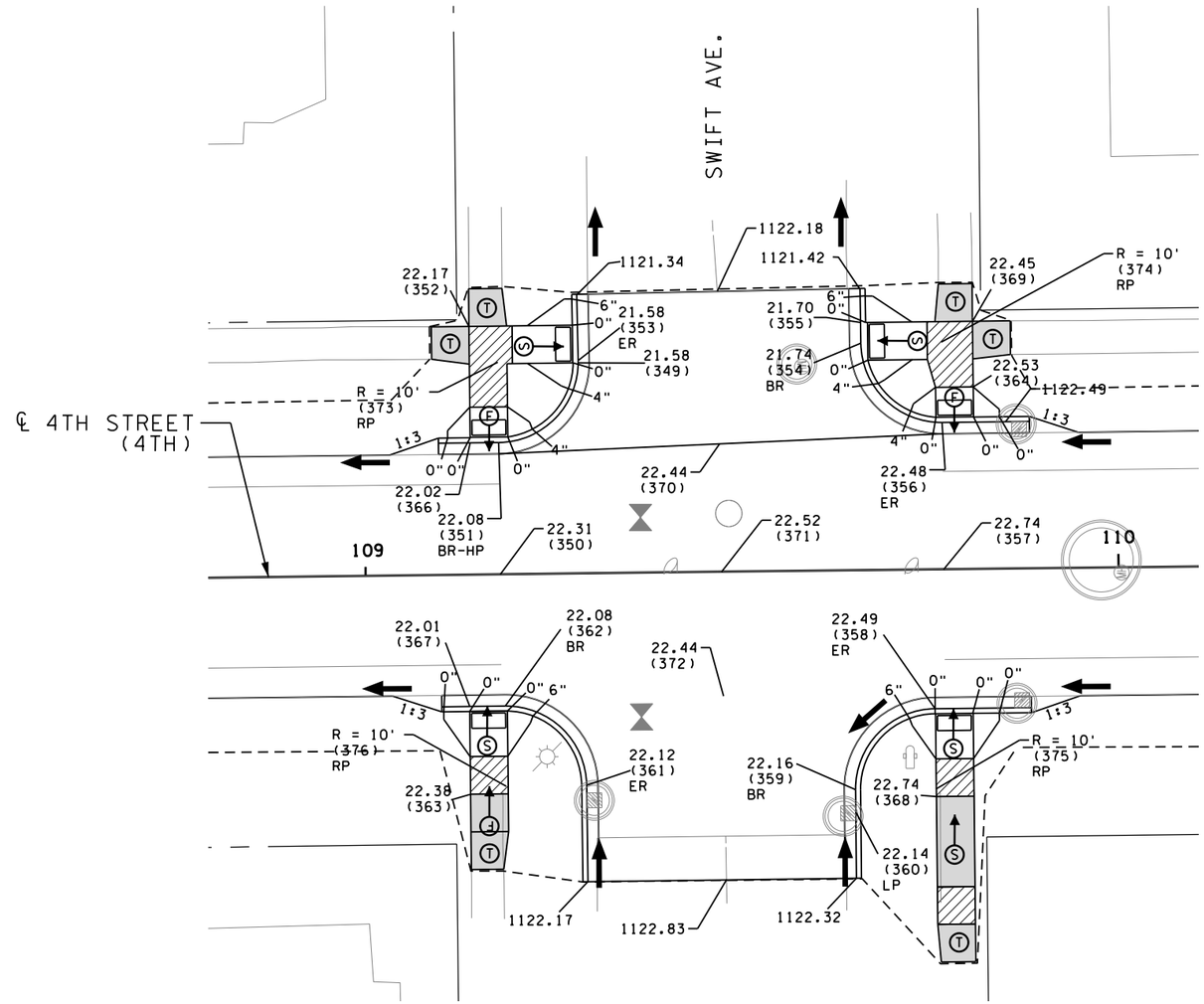
SHEET 108 OF 239

tjmla 2/8/2019 9:31:34 AM pdf-B and W.pltcfg bmi.tbl

CONTROL POINTS		
POINT NO.	X	Y
349	556129.11	187041.606
350	556118.776	187013.529
351	556118.562	187031.694
352	556114.624	187046.448
353	556129.108	187041.909
354	556166.657	187044.221
355	556166.62	187046.967
356	556177.439	187033.698
357	556177.653	187014.199
358	556176.512	186995.685
359	556165.963	186984.918
360	556165.991	186981.944
361	556130.251	186985.509
362	556119.459	186996.036
363	556114.846	186984.314
364	556181.585	187038.41
366	556114.793	187030.983
367	556114.733	186995.983
368	556176.699	186984.018
369	556181.505	187047.13
370	556148.021	187030.863
371	556148.17	187013.876
372	556148.423	186997.358
373	556118.443	187041.694
374	556177.323	187044.364
375	556176.629	186985.019
376	556119.585	186985.37

NOTE:
BR = BEGIN RADIUS
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- EL. (XXX) — CONTROL POINT ELEVATION IN 1100' RANGE
- X" — CURB HEIGHT
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0 10 20
SCALE FEET

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ANDREW H. KROG
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DATE 12-27-2018

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DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
INTERSECTION DETAILS & ADA PLANS

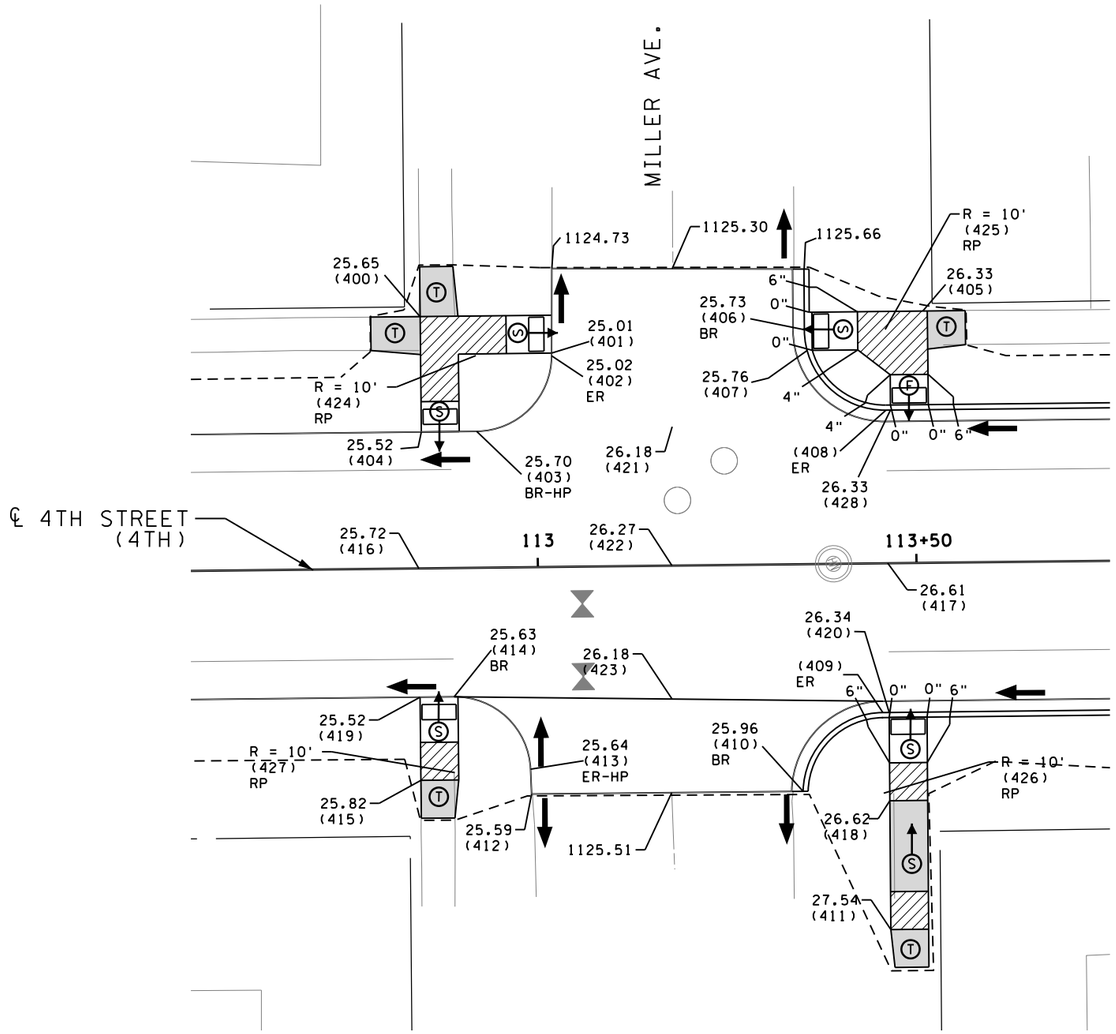
SHEET 109 OF 239

tlmla 2/8/2019 pdf-B and W.pltcfg 9:31:35 AM bmi.tbl

CONTROL POINTS		
POINT NO.	X	Y
400	556485.335	187050.797
401	556502.698	187045.986
402	556502.698	187045.623
403	556492.807	187035.649
404	556485.501	187035.569
406	556536.053	187049.057
407	556536.42	187046.331
408	556546.837	187038.44
409	556546.436	186998.533
410	556535.889	186988.13
411	556547.477	186969.876
412	556500.057	186987.779
413	556499.914	186991.05
414	556489.814	187000.614
415	556485.435	186989.565
416	556485.168	187017.564
417	556547.058	187018.241
418	556547.344	186986.876
419	556485.315	187000.565
420	556547.252	186998.542
421	556518.607	187036.265
422	556518.594	187017.93
423	556518.581	187000.319
424	556492.698	187045.648
425	556546.72	187049.106
426	556546.553	186987.867
427	556489.924	186990.614
428	556547.442	187038.447

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0 10 20
SCALE FEET

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ANDREW H. KROG
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DESIGNED AHK
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CHECKED TL

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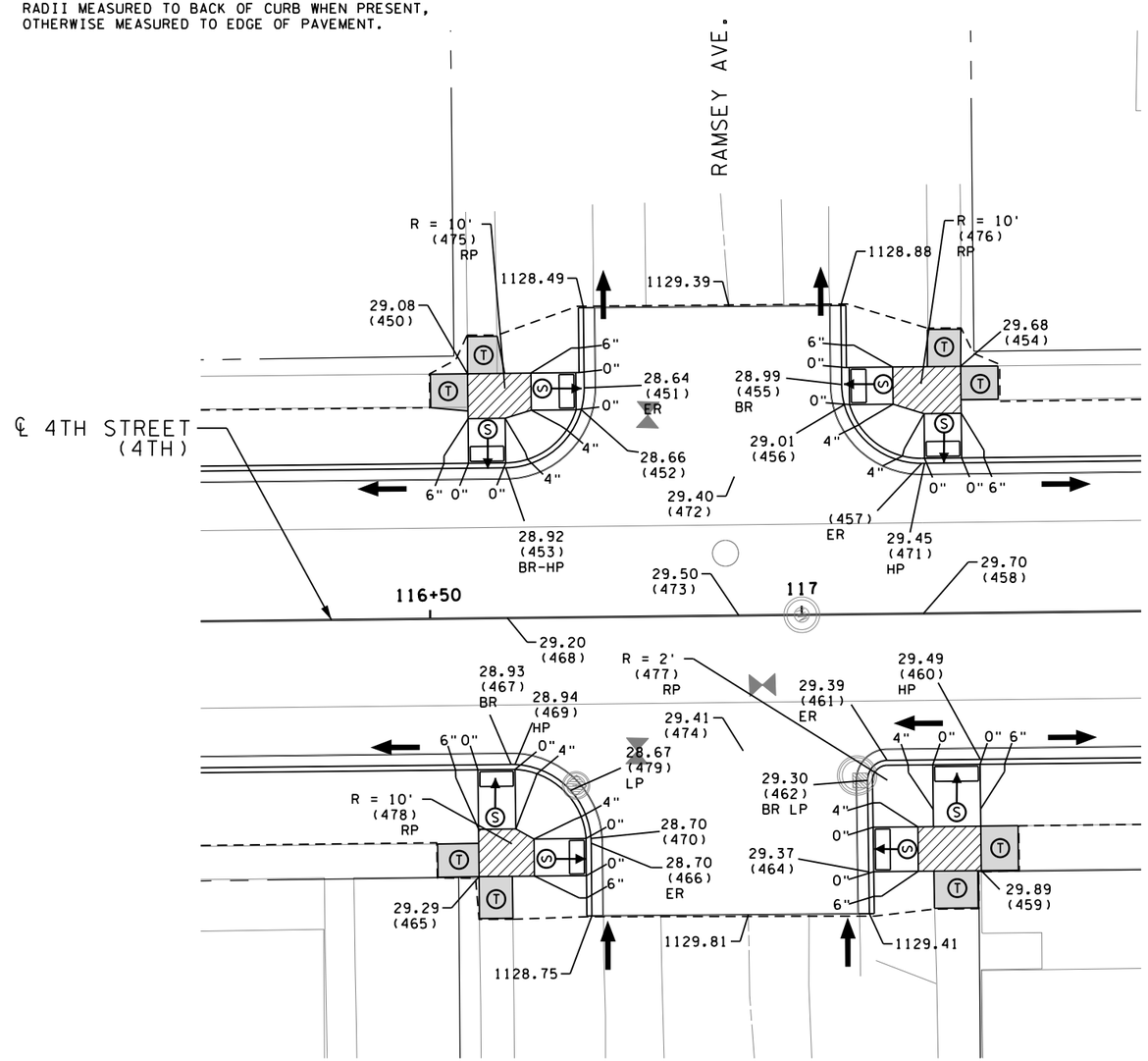
SHEET 110 OF 239

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pdf-B and W.pltcfg
9:31:37 AM
2/8/2019
timla

CONTROL POINTS		
POINT NO.	X	Y
450	556855.882	187054.535
451	556871.571	187052.634
452	556871.186	187049.702
453	556861.021	187041.878
454	556922.235	187055.536
455	556906.217	187053.068
456	556906.587	187050.372
457	556917	187042.491
458	556917.221	187022.292
459	556925.009	186987.706
460	556924.846	187002.674
461	556912.342	187002.537
462	556909.705	186999.835
464	556909.857	186987.545
465	556857.438	186986.882
466	556872.519	186991.405
467	556861.735	187001.984
468	556861.242	187021.679
469	556862.273	187001.976
470	556872.494	186992.047
471	556917.377	187042.495
472	556891.791	187040.715
473	556892.389	187022.02
474	556892.97	187003.826
475	556860.904	187052.544
476	556916.883	187053.157
477	556912.372	186999.871
478	556861.852	186991.318
479	556869.746	186998.49

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EL. (XXX) — CONTROL POINT ELEVATION IN 1100' RANGE

X" — CURB HEIGHT

CATCH BASIN

PEDESTRIAN PUSH BUTTON STATION

LIGHTING UNIT

HANDHOLE

LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS

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0 10 20
SCALE FEET

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S.A.P. 135-010-008
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T.H. 12/22 RECONSTRUCTION
INTERSECTION DETAILS & ADA PLANS

SHEET 111 OF 239

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pdf-B and W.pltcfg
9:31:38 AM
2/8/2019
timla

NOTE:
FOR ADA TABS, SEE SHEET 122-123.

NOTE:
BR = BEGIN RADIUS
RP = RADIUS POINT
ER = END RADIUS
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LP = LOW POINT

RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.

TRINITY EPISCOPAL CHURCH

℄ 4TH STREET (4TH)

℄ T.H. 12/22 (TH12_NORTH)

B/L TH12_CURB_W1

B/L TH12_WALK_W1

MATCHLINE STA. 2+50

KENNALILIS HOME DECOR.

MEEKER COUNTY COURTHOUSE

R = 15' (522) RP
28.43 (500)
1127.84
(526)
27.72 (501) LP
6" 0"
1128.36
1127.81
R = 15' (523) RP
28.43 (505)
27.76 (506) BR-LP
(527)
(533)
1127.77
6" 0" 0" 4"
4"
27.78 (502)
28.05 (532)
121
0" 0" 3" 3"
27.91 (507)
(528)
1:10
+94
1.3%
8' (TYP.)
1.3%
3.83' (TYP.)
27.84 (504) BR-HP
28.01 (508) ER
1128.09
0
1
2
27.70 (520) LP
27.73 (519)
28.09 (521) LP
28.16 (511)
28.05 ER (512)
28.22 (510)
1127.87
(531)
27.85 (518) HP
27.94 (514) BR
28.00 (513)
901
902
3.83' (TYP.)
8' (TYP.)
1:10
+84
801
802
28.55 (516)
(530)
27.80 (517) ER-LP
1128.29
(529)
28.63 (509)
1129.67 (950)
R = 15' (525) RP
27.81 (515) LP
R = 10' (524) RP
120

LEGEND

- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- CONSTRUCT CONCRETE CURB & GUTTER
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- DRAINAGE FLOW ARROW
- PEDESTRIAN ACCESS ROUTE

- EL. (XXX) — CONTROL POINT ELEVATION IN 1100' RANGE
- X" — CURB HEIGHT
- CATCH BASIN
- PEDESTRIAN PUSH BUTTON STATION
- LIGHTING UNIT
- HANDHOLE
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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANDREW H. KROG
LIC. NO. 54689
DATE 12-27-2018

DESIGNED AHK
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
INTERSECTION DETAILS & ADA PLANS

SHEET 112 OF 239

LEGEND

- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
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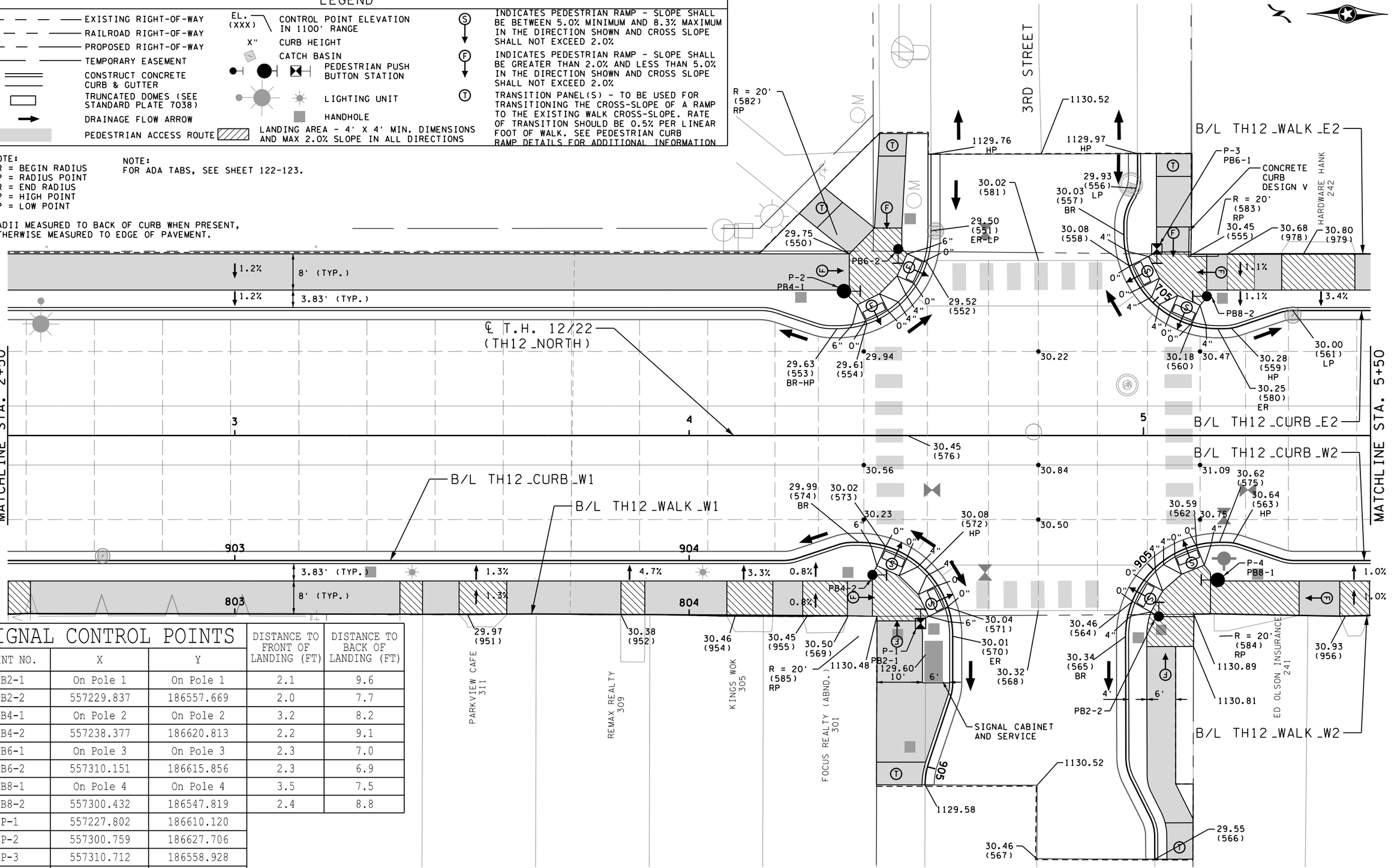
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NOTE:
FOR ADA TABS, SEE SHEET 122-123.



SIGNAL CONTROL POINTS

POINT NO.	X	Y	DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
PB2-1	On Pole 1	On Pole 1	2.1	9.6
PB2-2	557229.837	186557.669	2.0	7.7
PB4-1	On Pole 2	On Pole 2	3.2	8.2
PB4-2	557238.377	186620.813	2.2	9.1
PB6-1	On Pole 3	On Pole 3	2.3	7.0
PB6-2	557310.151	186615.856	2.3	6.9
PB8-1	On Pole 4	On Pole 4	3.5	7.5
PB8-2	557300.432	186547.819	2.4	8.8
P-1	557227.802	186610.120		
P-2	557300.759	186627.706		
P-3	557310.712	186558.928		
P-4	557238.032	186544.820		

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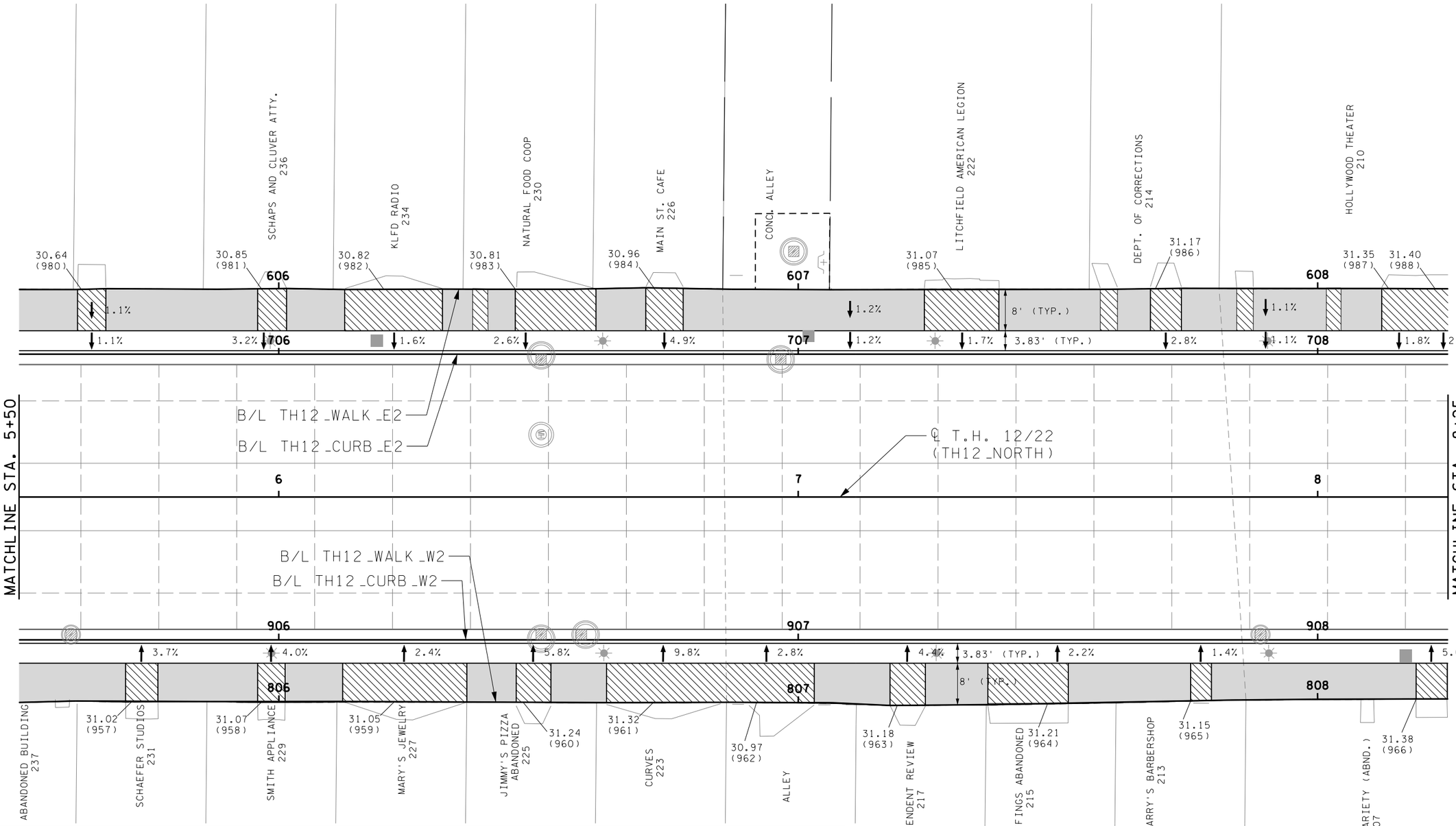
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SHEET 113 OF 239



LEGEND

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CATCH BASIN

PEDESTRIAN PUSH BUTTON STATION

LIGHTING UNIT

HANDHOLE

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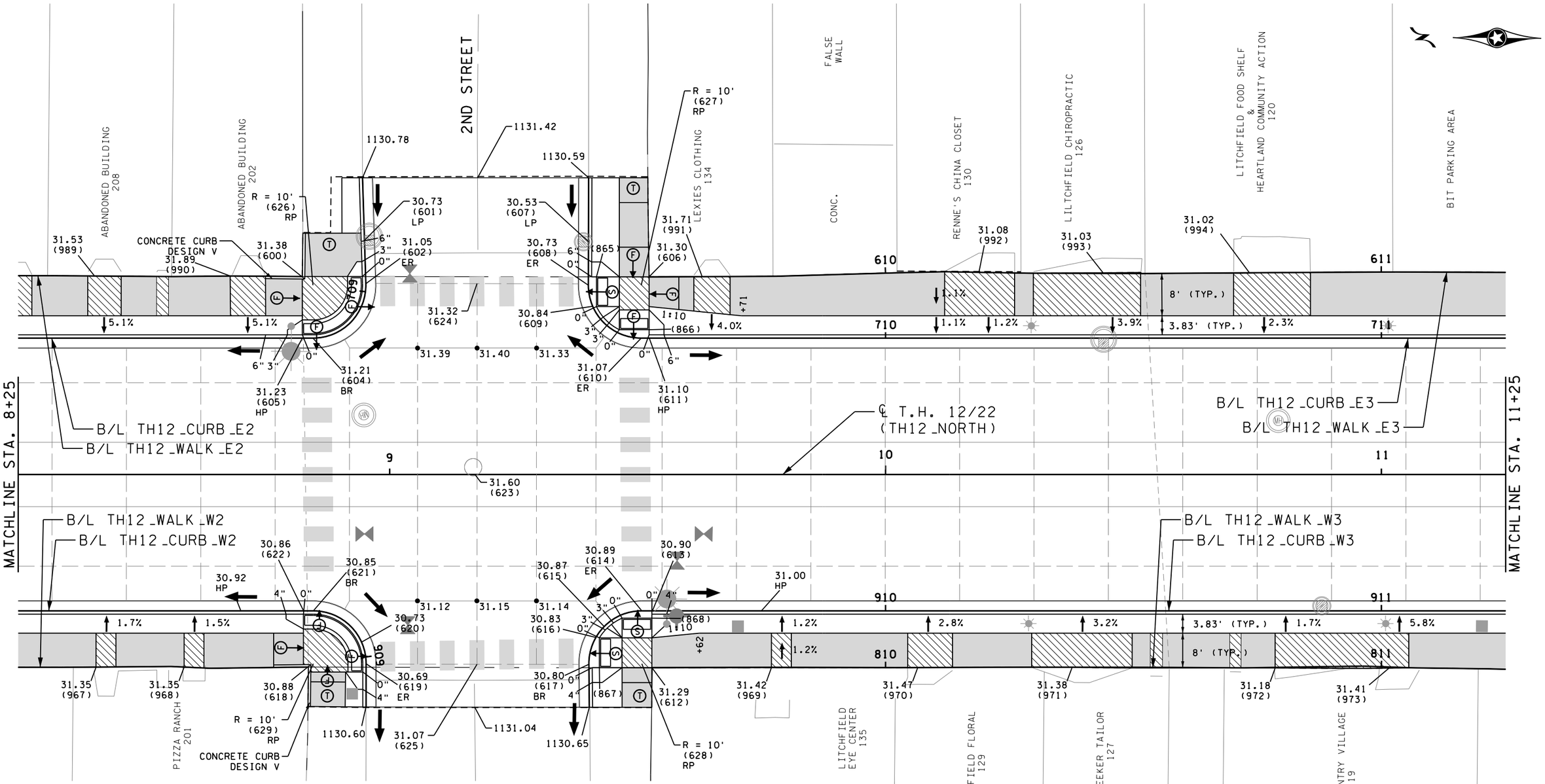
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SHEET 114 OF 239



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S.A.P. 135-117-005

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MATCHLINE STA. 13+80

℄ T.H. 12 (TH12_EAST)

MATCHLINE STA. 11+25

℄ T.H. 12/22 (TH12_NORTH)

℄ T.H. 22 (TH22)

MATCHLINE STA. 68+00 SEE SHEET 121

B/L TH12_WALK_E3

B/L TH12_CURB_E3

B/L TH12_CURB_W3

B/L TH12_WALK_W3

SIBLEY ANTIQUES 100

DEPOT STREET

CONCRETE CURB DESIGN V

SIGNAL CABNINET & SERVICE

SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
POINT NO.	X	Y		
PB2-1	On Pole 2-1	On Pole 2-1	5.6	1.1
PB2-2	185748.632	557226.794	2.6	1.6
PB4-1	185828.990	557311.650	1	5
PB4-2	185834.595	557238.633	4.4	1.1
PB6-1	185727.856	557318.011	2	8.5.0
PB6-2	185788.138	557338.469	2	7.5
PB8-1	185715.136	557240.319	5.2	1
PB8-2	185715.401	557307.632	2.1	2.7
P2-1	185827.940	557227.345		
P4-1	185837.685	557306.858		
P6-1	185727.856	557318.011		
P8-1	185727.373	557237.168		

PROPOSED SIGNAL POLE

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S.A.P. 135-117-005

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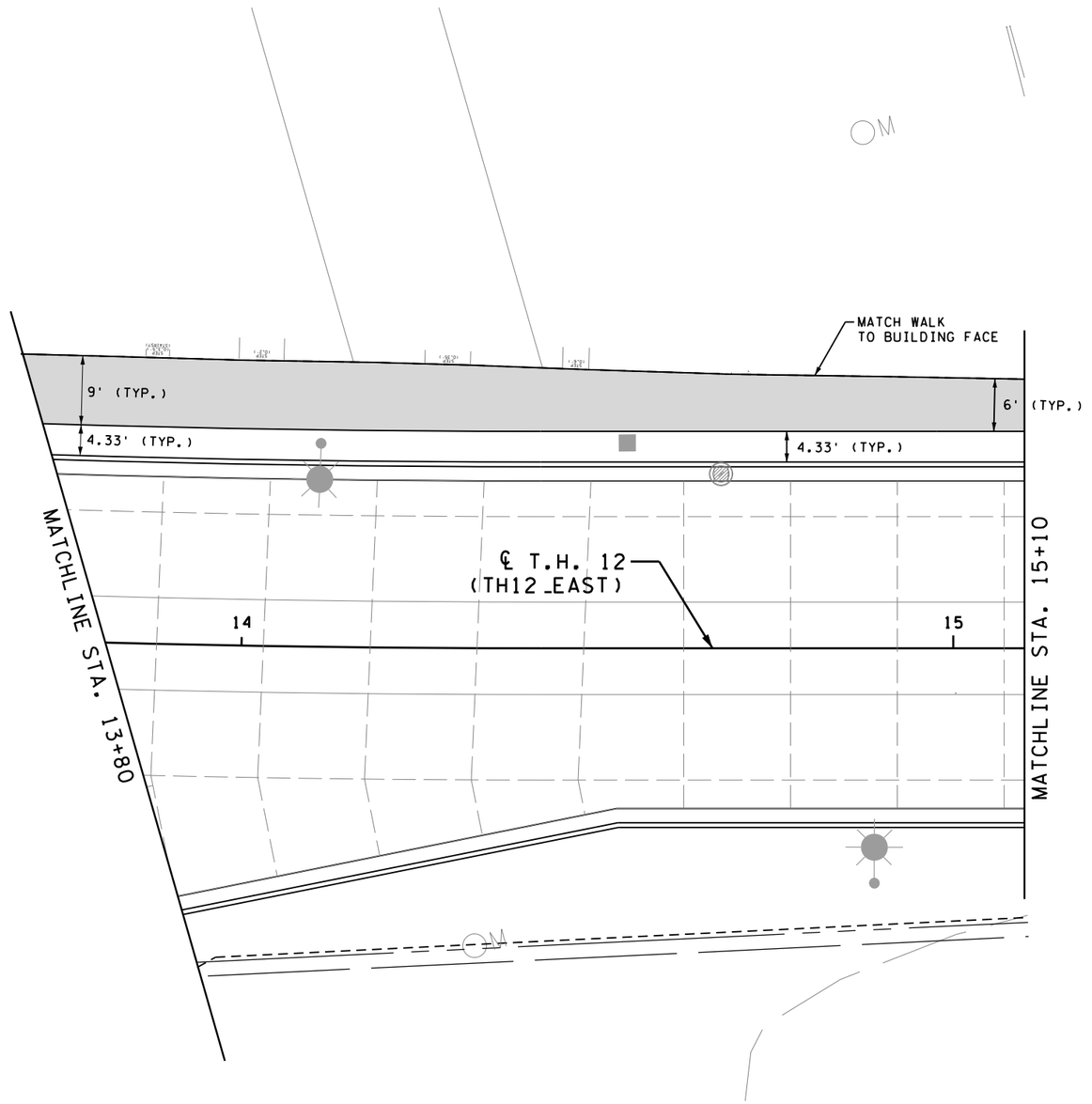
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SHEET 116 OF 239

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LEGEND

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CONTROL POINTS		
POINT NO.	X	Y
700	557609.599	185740.837
701	557617.775	185733.478
702	557632.268	185720.432
703	557604.266	185722.300
704	557561.902	185716.973
705	557633.037	185713.013
706	557629.917	185715.821
707	557618.972	185706.959
708	557619.407	185704.265
709	557628.154	185701.859
710	557629.988	185702.873
711	557649.644	185708.439
712	557653.378	185707.567
713	557654.678	185714.228
714	557650.890	185714.824
717	557635.857	185717.183
725	557698.145	185686.229
726	557698.033	185678.486
727	557697.657	185701.026

ISLAND RADIUS POINTS
(732) R = 1.5'
(733) R = 77.33'

N. MARSHALL AVE.

E. 1ST STREET

R = 55' (729) RP

733

MATCH WALK TO EXISTING PAVEMENT

28.90 (700)

28.36 (701)

OUTFLOW GUTTER

28.74 (702)

29.19 (714)

29.25 (713)

OUTFLOW GUTTER

28.88 (717)

28.62 (711) ER

28.68 (712) ER

28.70 (727)

28.46 (725) BR

28.68 (706) ER

28.67 (705) BR

6' (TYP.)

4.33' (TYP.)

28.16 (703) LP

28.70 (707) BR-ER

28.55 (710) BR

732

28.72 (708) BR

28.67 (709) ER

OUTFLOW GUTTER

28.43 (704) BR

R = 4' (731) RP

28.05 (726) ER

SEE MISCELLANEOUS DETAILS FOR 8" CONCRETE VALLEY GUTTER DETAILS

MATCHLINE STA. 15+10

16

17

℄ T.H. 12

NOTE:
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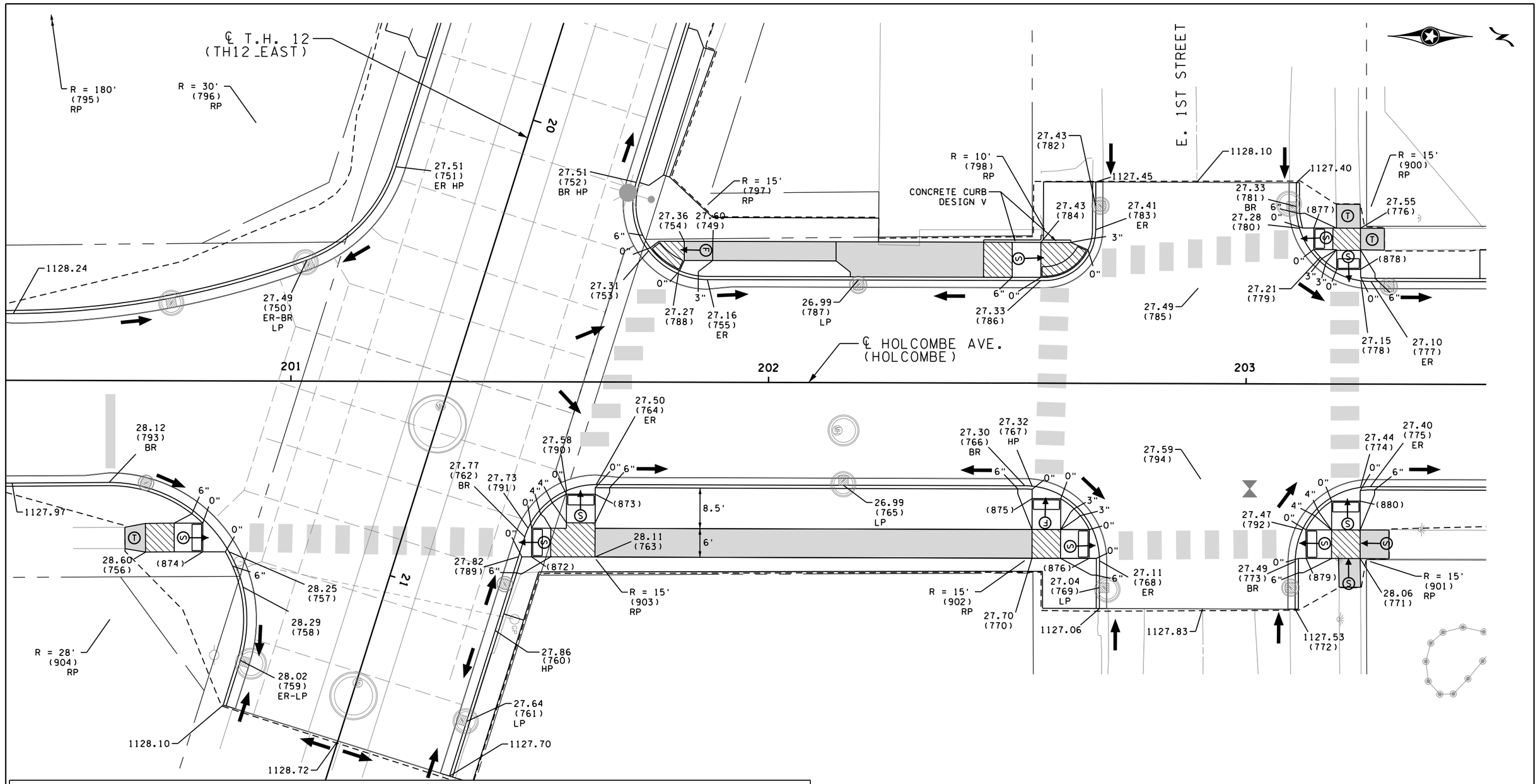
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LP = LOW POINT

RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.

NOTE:
FOR ADA TABS, SEE SHEET 123.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

BOLTON & MENK
12224 NICOLLET AVENUE
BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burnsville@bolton-menk.com
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REV.	BY	DATE

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ANDREW H. KROG
LIC. NO. 54689
DATE 12-27-2018

DESIGNED	DRAWN	CHECKED
AHK	TWB	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
INTERSECTION DETAILS & ADA PLANS

SHEET 119 OF 239

LEGEND

- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- CONSTRUCT CONCRETE CURB & GUTTER
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- DRAINAGE FLOW ARROW
- PEDESTRIAN ACCESS ROUTE

EL. (XXX) — CONTROL POINT ELEVATION IN 1100' RANGE

X" — CURB HEIGHT

CATCH BASIN

PEDESTRIAN PUSH BUTTON STATION

LIGHTING UNIT

HANDHOLE

LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS

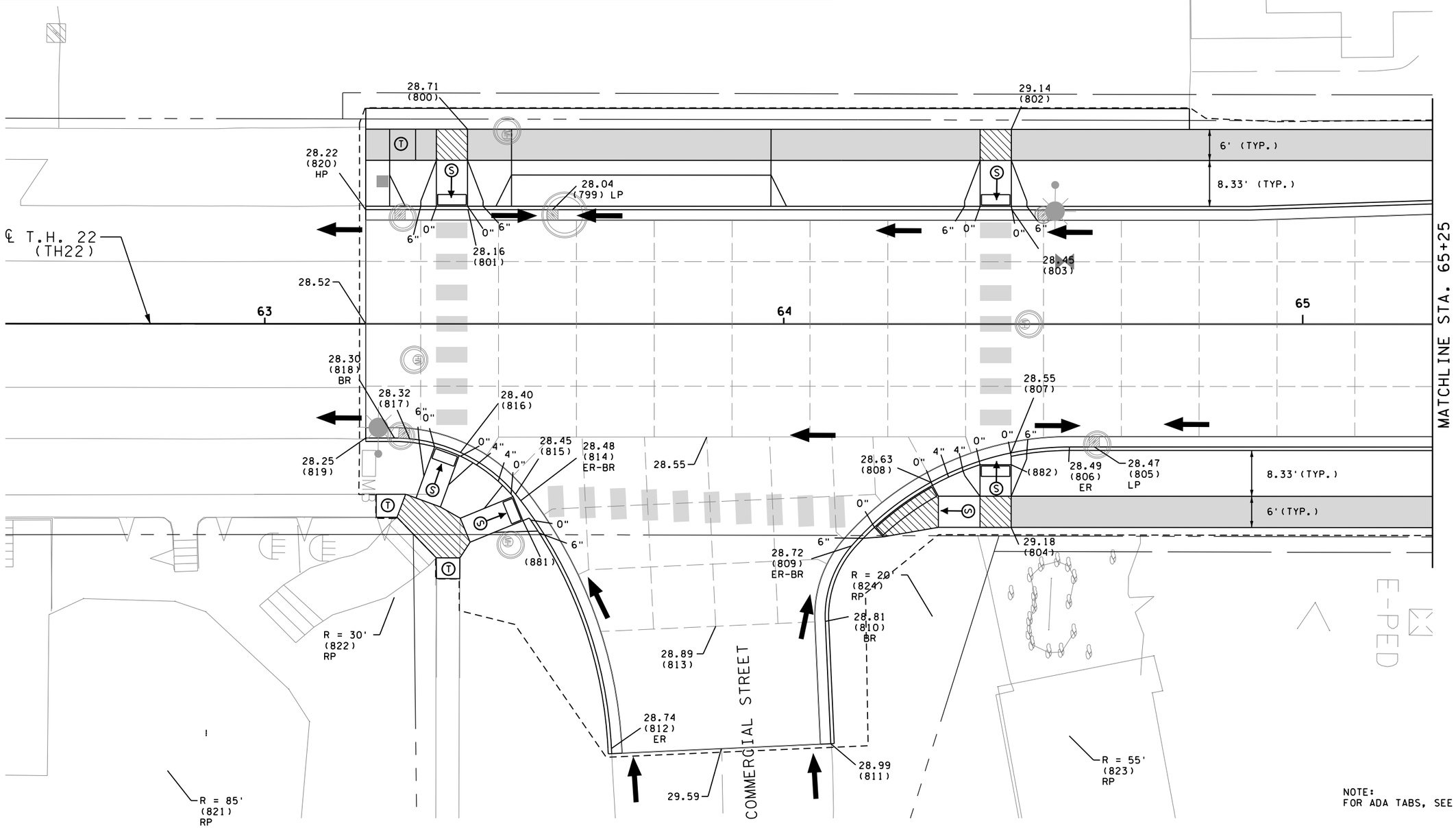
(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

(T) TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER LINEAR FOOT OF WALK. SEE PEDESTRIAN CURB RAMP DETAILS FOR ADDITIONAL INFORMATION

NOTE:
BR = BEGIN RADIUS
RP = RADIUS POINT
ER = END RADIUS
HP = HIGH POINT
LP = LOW POINT

RADII MEASURED TO BACK OF CURB WHEN PRESENT, OTHERWISE MEASURED TO EDGE OF PAVEMENT.



NOTE:
FOR ADA TABS, SEE SHEET 123.

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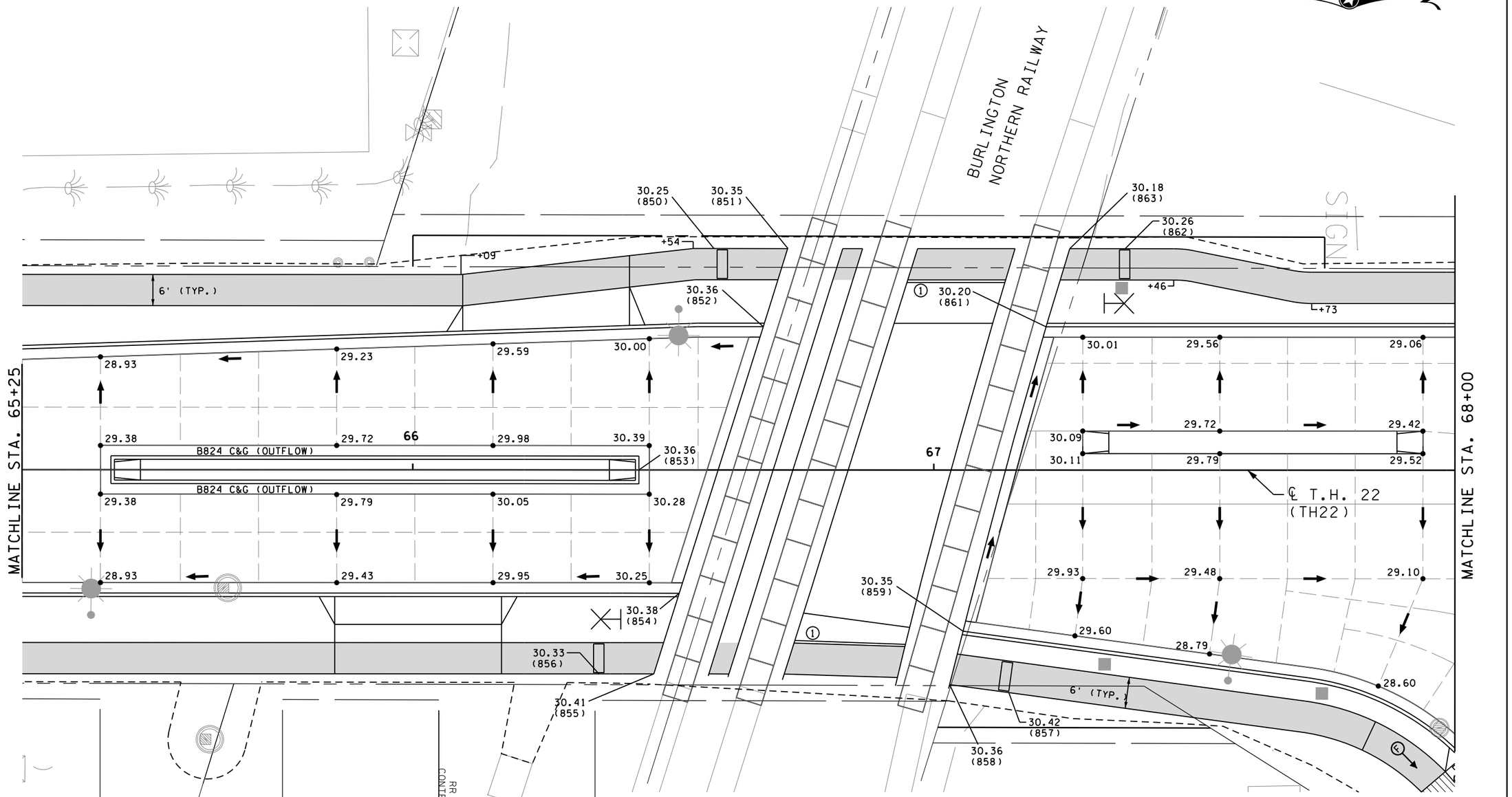
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DRAWN	TWB
CHECKED	TL

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T.H. 12/22 RECONSTRUCTION
INTERSECTION DETAILS & ADA PLANS

SHEET 120 OF 239



NOTE:
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FOR ADA TABS, SEE SHEET 123.

① MILLED RUMBLE STRIPS, SEE DETAIL SHEET 24.

LEGEND

- EXISTING RIGHT-OF-WAY
- RAILROAD RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- TEMPORARY EASEMENT
- CONSTRUCT CONCRETE CURB & GUTTER
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- DRAINAGE FLOW ARROW
- PEDESTRIAN ACCESS ROUTE
- EL. (XXX) — CONTROL POINT ELEVATION IN 1100' RANGE
- X" — CURB HEIGHT
- CATCH BASIN
- PEDESTRIAN PUSH BUTTON STATION
- LIGHTING UNIT
- HANDHOLE
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- (S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- (F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
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CHECKED TL

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T.H. 12/22 RECONSTRUCTION
INTERSECTION DETAILS & ADA PLANS

SHEET 121 OF 239

T.H. 12/22 & 4TH ST.

CONTROL POINTS

POINT NO.	X	Y
500	557305.415	187061.577
501	557311.693	187046.434
502	557299.845	187048.816
504	557292.537	187061.911
505	557305.105	186990.698
506	557311.042	187006.425
507	557298.987	187003.137
508	557292.891	186990.577
509	557225.979	186991.101
510	557237.882	186991.219
511	557237.84	186995.421
512	557234.609	187002.964
513	557231.938	187004.859
514	557226.977	187005.981
515	557219.549	187005.9
516	557226.425	187059.413
517	557221.69	187045.825
518	557231.256	187049.218
519	557237.056	187059.489
520	557237.032	187065.559
521	557239.451	187025.836
522	557308.203	187062.067
523	557308.557	186990.733
524	557227.174	186995.315
525	557221.518	187061.491
526	557305.533	187049.62
527	557304.995	187002.347
528	557294.914	186990.597
529	557225.837	187004.096
530	557226.529	187049.928
531	557235.042	187059.499
532	557290.713	187026.379
533	557294.023	187062.035

T.H. 12/22 & 3RD ST.

CONTROL POINTS

POINT NO.	X	Y
550	557308.998	186626.614
551	557314.208	186608.675
552	557307.282	186609.514
553	557292.472	186629.129
554	557293.592	186622.62
555	557309.129	186551.899
556	557324.062	186563.661
557	557313.763	186566.198
558	557306.944	186564.969
559	557293.469	186542.351
560	557294.058	186551.072
561	557297.465	186528.863
562	557245.641	186549.524
563	557246.2	186541.538
564	557232.985	186563.631
565	557225.367	186564.978
566	557176.429	186558.041
567	557176.268	186584.022
568	557230.914	186584.223
569	557229.324	186626.037
570	557225.06	186603.014
571	557231.364	186604.064
572	557239.613	186609.211
573	557244.738	186618.038
574	557245.522	186623.884
575	557246.308	186544.517
576	557269.126	186613.43
580	557293.302	186545.327
581	557307.91	186584.957
582	557313.138	186629.334
583	557313.968	186545.532
584	557225.642	186544.312
585	557224.856	186623.679

T.H. 12/22 & 2ND ST.

CONTROL POINTS

POINT NO.	X	Y
600	557312.869	186178.991
601	557320.79	186167.03
602	557312.047	186166.677
604	557300.949	186177.229
605	557300.928	186179.38
606	557313.983	186109.567
607	557320.947	186121.865
608	557312.187	186121.793
609	557307.935	186120.872
610	557301.605	186111.021
611	557301.621	186109.41
612	557235.175	186108.214
613	557246.63	186108.23
614	557246.609	186110.374
615	557243.366	186117.928
616	557241.149	186119.578
617	557235.713	186120.933
618	557235.114	186176.989
619	557235.377	186165.843
620	557239.722	186166.809
621	557245.953	186176.615
622	557245.933	186178.583
623	557273.775	186144.27
624	557312.289	186144.237
625	557235.495	186143.499
626	557311.616	186177.335
627	557312.272	186111.127
628	557235.943	186110.268
629	557235.286	186176.509
865	557313.878	186120.169
866	557303.319	186109.461
867	557235.07	186118.794
868	557245.148	186108.313

T.H. 12/22 & DEPOT ST.

CONTROL POINTS

POINT NO.	X	Y
647	557306.647	185813.916
650	557316.98	185828.425
651	557339.392	185795.602
652	557339.423	185780.612
653	557335.186	185782.2
654	557314.231	185798.814
655	557304.406	185828.3
656	557344.618	185686.025
657	557372.223	185703.732
658	557337.744	185693.989
659	557328.553	185684.801
660	557318.398	185660.145
661	557329.827	185726.613
662	557329.164	185731.375
663	557313.127	185736.505
664	557304.111	185739.389
665	557300.631	185736.823
666	557300.766	185722.695
667	557300.958	185702.56
668	557306.997	185698.446
669	557318.161	185716.509
670	557308.734	185722.771
671	557239.544	185721.098
673	557215.938	185743.711
674	557211.796	185767.692
675	557230.689	185757.256
676	557241.804	185744.552
677	557250.501	185715.202
678	557226.185	185747.188
679	557228.9	185828.692
680	557238.915	185836.177
681	557249.251	185843.725
682	557246.561	185832.278
683	557231.487	185819.799
684	557217.07	185819.986
685	557355.071	185828.802
686	557368.673	185653.858
687	557194.837	185714.672
688	557224.585	185843.481
689	557363.389	185676.076
690	557328.351	185728.835
691	557303.298	185736.848
692	557194.837	185714.672
869	557335.685	185783.771
870	557229.451	185754.93
871	557312.97	185712.82

T.H. 12 & MARSHALL AVE.

CONTROL POINTS

POINT NO.	X	Y
700	557609.599	185740.837
701	557617.821	185733.488
702	557632.268	185720.432
703	557604.265	185722.301
704	557561.902	185716.973
705	557633.037	185713.013
706	557629.917	185715.821
707	557618.972	185706.959
708	557619.407	185704.265
709	557629.988	185702.873
710	557628.154	185701.859
711	557649.644	185708.439
712	557653.378	185707.567
713	557654.678	185714.228
714	557650.89	185714.824
717	557651.126	185740.612
725	557700.792	185686.107
726	557699.845	185678.912
727	557697.657	185701.026
729	557576.668	185770.646
731	557699.094	185682.343
732	557619.805	185705.711
733	557576.668	185770.646

NOTE:
SEE INTERSECTION PLANS FOR
LOCATION AND ADA INFORMATION

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T.H. 12 & HOLCOMBE AVE.

CONTROL POINTS		
POINT NO.	X	Y
749	557992.872	185610.497
750	557997.636	185525.564
751	557977.886	185543.993
752	557980.661	185594.359
753	557994.971	185597.093
754	557992.914	185604.536
755	558000.879	185609.462
756	558059.105	185492.413
757	558058.89	185509.869
758	558066.254	185512.867
759	558081.606	185512.504
760	558074.827	185565.771
761	558093.921	185559.974
762	558055.158	185571.742
763	558059.211	185586.505
764	558044.043	185586.622
765	558043.677	185638.348
766	558043.404	185676.35
767	558043.467	185677.869
768	558058.959	185692.129
769	558064.593	185692.17
770	558058.56	185677.977
771	558057.958	185746.709
772	558068.666	185733.199
773	558058.667	185733.127
774	558043.042	185746.603
775	558042.888	185748.682
776	557988.761	185746.062
777	557999.889	185748.376
778	557999.762	185746.264
779	557994.905	185737.734
780	557988.904	185733.313
781	557984.334	185732.598
782	557984.622	185690.6
783	557989.634	185690.634
784	557992.382	185679.208
785	558001.647	185712.237
786	558000.376	185680.044
787	558000.678	185638.056
788	557999.695	185603.374
789	558059.326	185570.477
790	558045.377	185580.406
791	558053.311	185572.432
792	558052.05	185734.542
793	558044.614	185484.606
794	558041.641	185713.16
795	557828.799	185461.262
796	557968.977	185514.649
797	557985.213	185609.35
798	557989.71	185679.968
872	558059.306	185573.212
873	558046.064	185586.411
874	558058.948	185504.388
877	557988.814	185736.309
878	557997.376	185746.193
879	558058.043	185735.389
880	558045.937	185746.597
900	557984.223	185748.264
901	558058.555	185748.794
902	558059.07	185676.462
903	558059.71	185586.733
904	558073.278	185485.074

T.H. 22 & COMMERCIAL ST.

CONTROL POINTS		
POINT NO.	X	Y
799	557260.5	185243.152
800	557245.158	185226.613
801	557260.653	185226.853
802	557244.159	185331.379
803	557259.658	185331.538
804	557320.822	185332.11
805	557305.148	185347.972
806	557305.216	185343.175
807	557306.469	185331.951
808	557312.282	185316.558
809	557324.703	185301.397
810	557339.272	185296.469
811	557362.838	185297.769
812	557364.163	185255.531
813	557340.436	185275.377
814	557316.602	185237.583
815	557315.362	185236.563
816	557307.437	185225.865
817	557304.903	185216.06
818	557304.789	185213.103
819	557304.842	185207.572
820	557260.844	185207.153
821	557369.266	18517.016
822	557335.454	185213.395
823	557360.88	185343.706
824	557338.134	185317.105
881	557320.46	185238.034
882	557308.753	185331.995

T.H. 22 & BNSF RAILRAOD

CONTROL POINTS		
POINT NO.	X	Y
850	557237.16	185541.295
851	557236.984	185559.496
852	557252.029	185554.88
853	557279.736	185533.277
854	557303.347	185539.249
855	557318.893	185534.525
856	557319.054	185524.069
857	557321.806	185602.695
858	557320.373	185591.314
859	557310.103	185593.807
861	557251.512	185609.148
862	557236.41	185624.135
863	557236.47	185613.463

T.H. 12/22 STOOPS

CONTROL POINTS		
POINT NO.	X	Y
950	557226.949	186885.016
951	557228.767	186709.838
952	557229.102	186676.072
954	557228.99	186650.955
955	557229.12	186635.129
956	557230.362	186516.628
957	557230.874	186489.449
958	557231.041	186464.485
959	557231.378	186438.88
960	557231.552	186414.033
961	557231.736	186389.006
962	557231.958	186369.123
963	557231.672	186342.014
964	557232.261	186313.101
965	557233.089	186285.53
966	557233.841	186242.155
967	557234.161	186220.31
968	557234.335	186202.555
969	557235.414	186084.095
970	557235.721	186054.605
971	557236.047	186023.48
972	557236.336	185982.513
973	557236.527	185959.579
974	557236.482	185930.41
975	557236.38	185915.614
976	557236.68	185900.752
977	557238.089	185867.815
978	557309.791	186543.426
979	557310.048	186526.584
980	557310.235	186499.868
981	557310.705	186465.198
982	557310.823	186441.653
983	557311.085	186416.336
984	557311.605	186389.648
985	557311.92	186332.313
986	557312.42	186293.12
987	557312.883	186248.206
988	557312.948	186239.291
989	557313.047	186221.394
990	557313.334	186194.042
991	557314.135	186098.872
992	557315.566	186043.045
993	557315.721	186018.026
994	557315.987	185988.473
995	557316.639	185906.015
996	557316.618	185888.21

NOTE:
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DRAWN TWB
CHECKED TL

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T.H. 12/22 RECONSTRUCTION
INTERSECTION DETAILS & ADA PLANS

SHEET 123 OF 239

℄ 4TH STREET

STA. 100+16.38
BEGIN S.P. 4704-89 (4TH STREET)
BEGIN S.A.P. 135-010-008 (4TH STREET)

JEWITTS CREEK

N. DONNELLY AVE.

N. AUSTIN AVE.

MATCHLINE STA. 106+25

100 105

0.025 0.02 0.02 +80 0.01 +50 0.01 0.01 +30 0.025 +60 0.025 +60 0.01 +90 0.01 +00 0.00 +37 0.02 +10 0.025 0.01 +45 0.025 0.01 +75

xc

LEGEND

SUPERELEVATION TRANSITION

TRAFFIC FLOW

NOTES:
1. SEE INTERSECTION DETAIL SHEETS FOR INTERSECTION AND PEDESTRIAN RAMP DETAILS.
2. SEE CONCRETE PAVEMENT PLAN SHEETS FOR PAVEMENT JOINTS AND CONCRETE PAVEMENT DETAILS.
3. SEE CROSS SECTIONS FOR DETAILED SLOPES.
4. SLOPES ARE FT/FT

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S.A.P. 135-117-005

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www.bolton-menk.com

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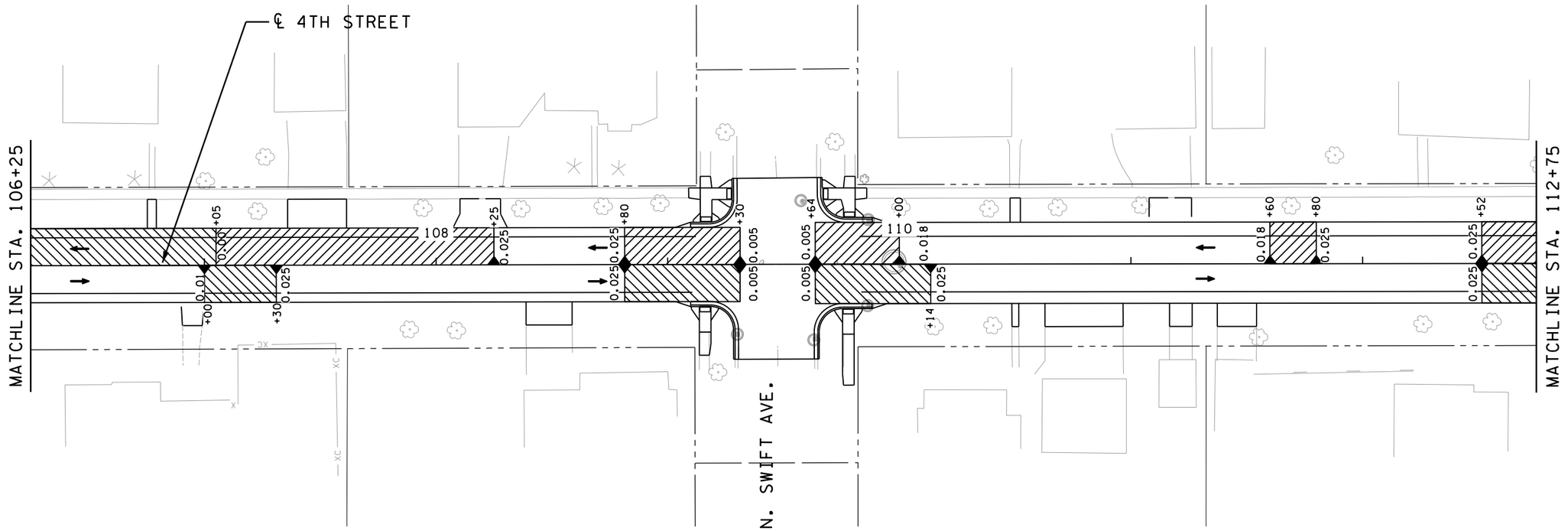
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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

DESIGNED TL
DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
SUPERELEVATION PLAN

SHEET 124 OF 239



LEGEND

- SUPERELEVATION TRANSITION
- TRAFFIC FLOW

NOTES:
1. SEE INTERSECTION DETAIL SHEETS FOR INTERSECTION AND PEDESTRIAN RAMP DETAILS.
2. SEE CONCRETE PAVEMENT PLAN SHEETS FOR PAVEMENT JOINTS AND CONCRETE PAVEMENT DETAILS.
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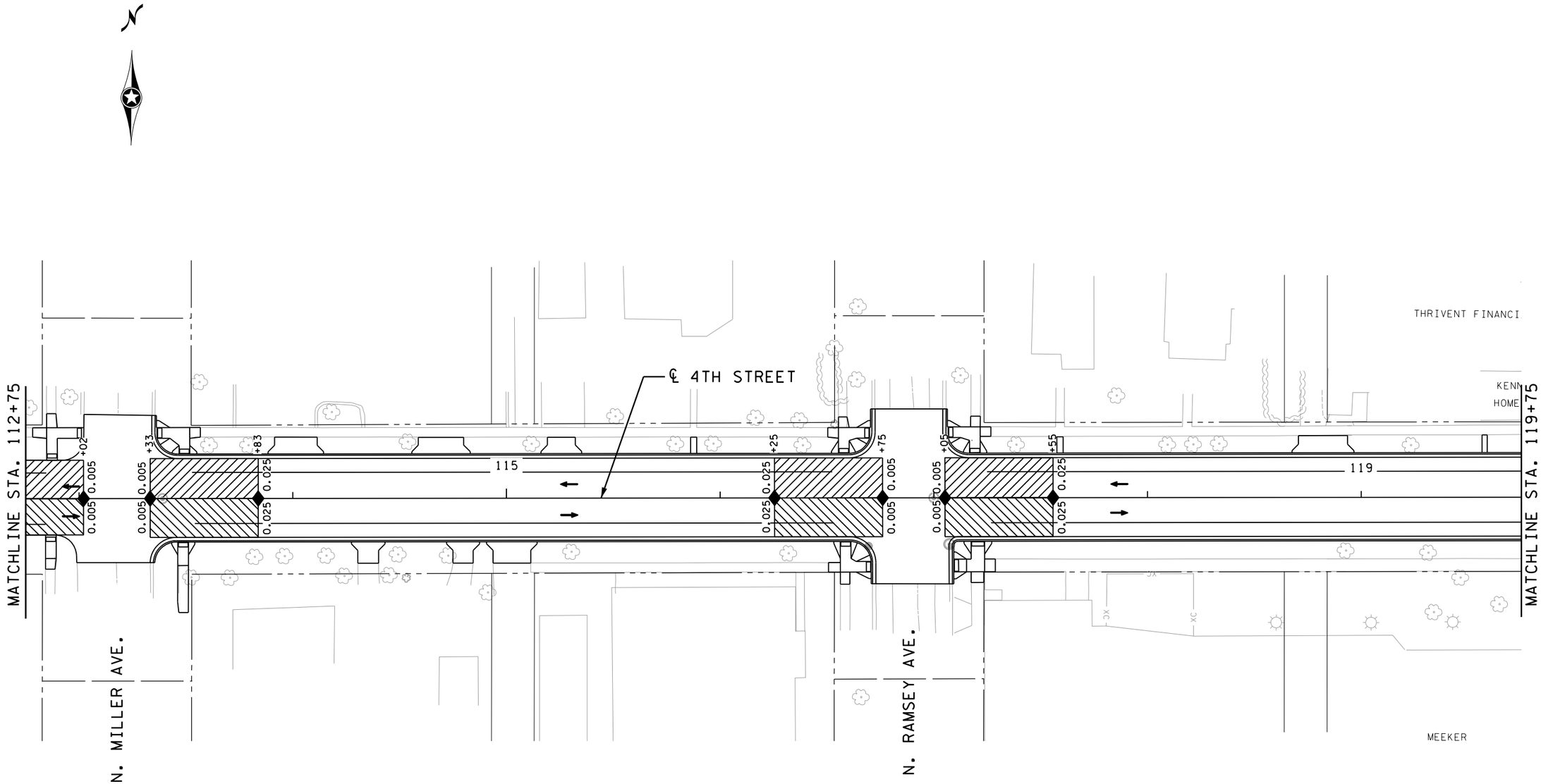
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DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
SUPERELEVATION PLAN

SHEET 125 OF 239



LEGEND

- SUPERELEVATION TRANSITION
- TRAFFIC FLOW

NOTES:

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3. SEE CROSS SECTIONS FOR DETAILED SLOPES.
4. SLOPES ARE FT/FT

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TL	TWB	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
SUPERELEVATION PLAN

SHEET 126 OF 239

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℄ 4TH STREET

122

END S.P. 4704-89 (4TH STREET)
END S.A.P 135-010-008 (4TH STREET)
STA. 121+12.66

BEGIN S.P. 4704-89
(T.H. 12/22)
BEGIN S.A.P. 135-010-008
(SIBLEY AVE.)
STA. 661+51.07

℄ T.H. 12/22
(TH12_NORTH)

3RD STREET

TRINITY EPISCOPAL CHURCH

660

0

5

CROWN

0.029 0.024 +90 0.035 +70 0.035 +85 0.05

0.003 0.01 0.01 0.01 0.01 0.01 0.025 0.01 0.01 0.02 +80 0.02 +05 0.02 +25 0.028

0.025 0.025 120 +03

MATCHLINE STA. 5+20

STA. EQUATION
T.H. 12/22 (TH12_NORTH) BK 661+69.42=
T.H. 12/22 (TH12_NORTH) AH 0+00.00

MATCHLINE STA. 119+75

MEEKER COUNTY COURTHOUSE

ALILIS DECOR.

AL

WALK

SIDEWALK

PARKVIEW CAFE 311

REMAX REALTY 309

KINGS WOK 301

FUCUS REALTY (ABND.) 301

LEGEND

- SUPERELEVATION TRANSITION
- TRAFFIC FLOW

NOTES:

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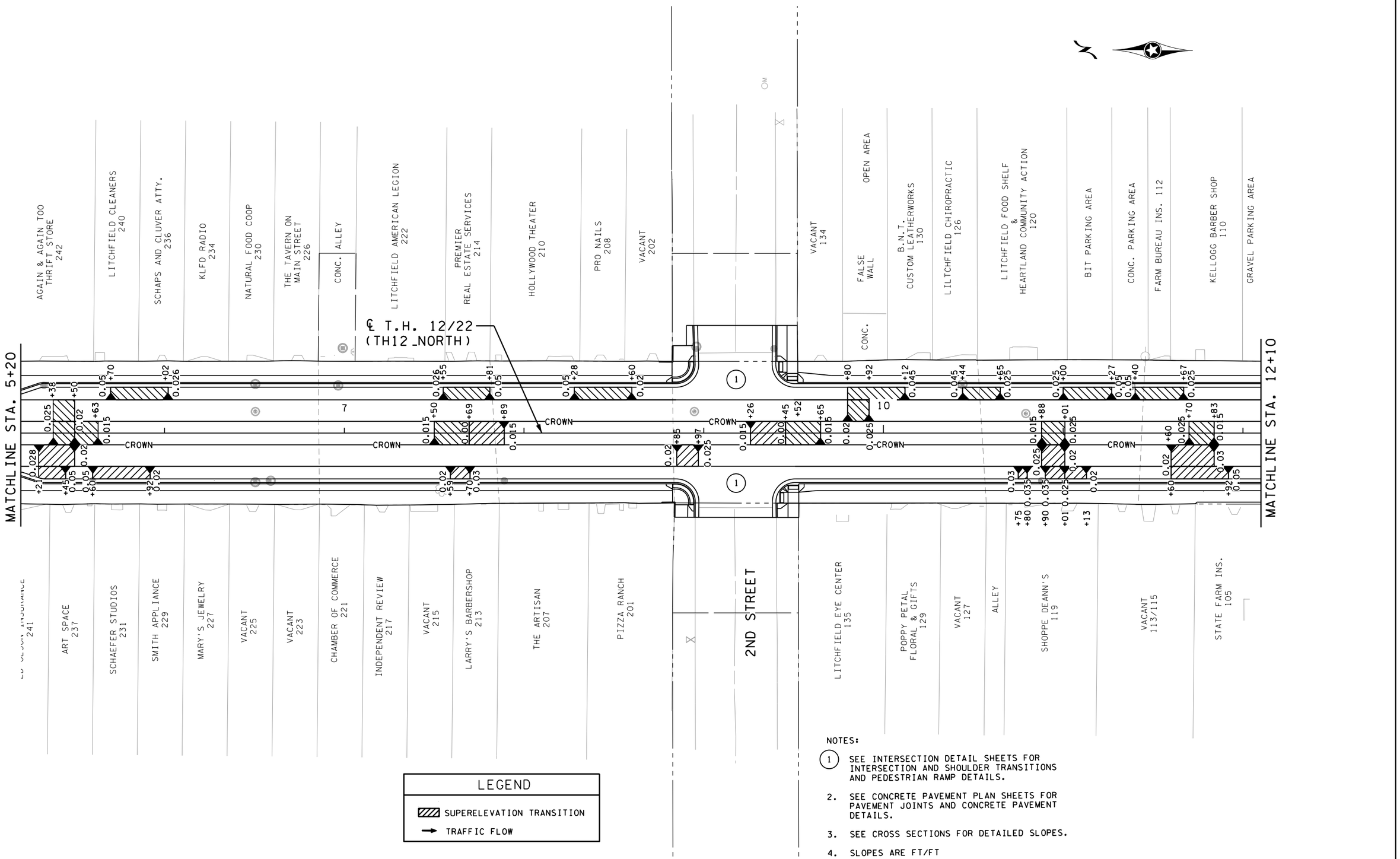
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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

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DRAWN TWB
CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
SUPERELEVATION PLAN

SHEET 127 OF 239



LEGEND

- SUPERELEVATION TRANSITION
- TRAFFIC FLOW

NOTES:

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3. SEE CROSS SECTIONS FOR DETAILED SLOPES.
4. SLOPES ARE FT/FT

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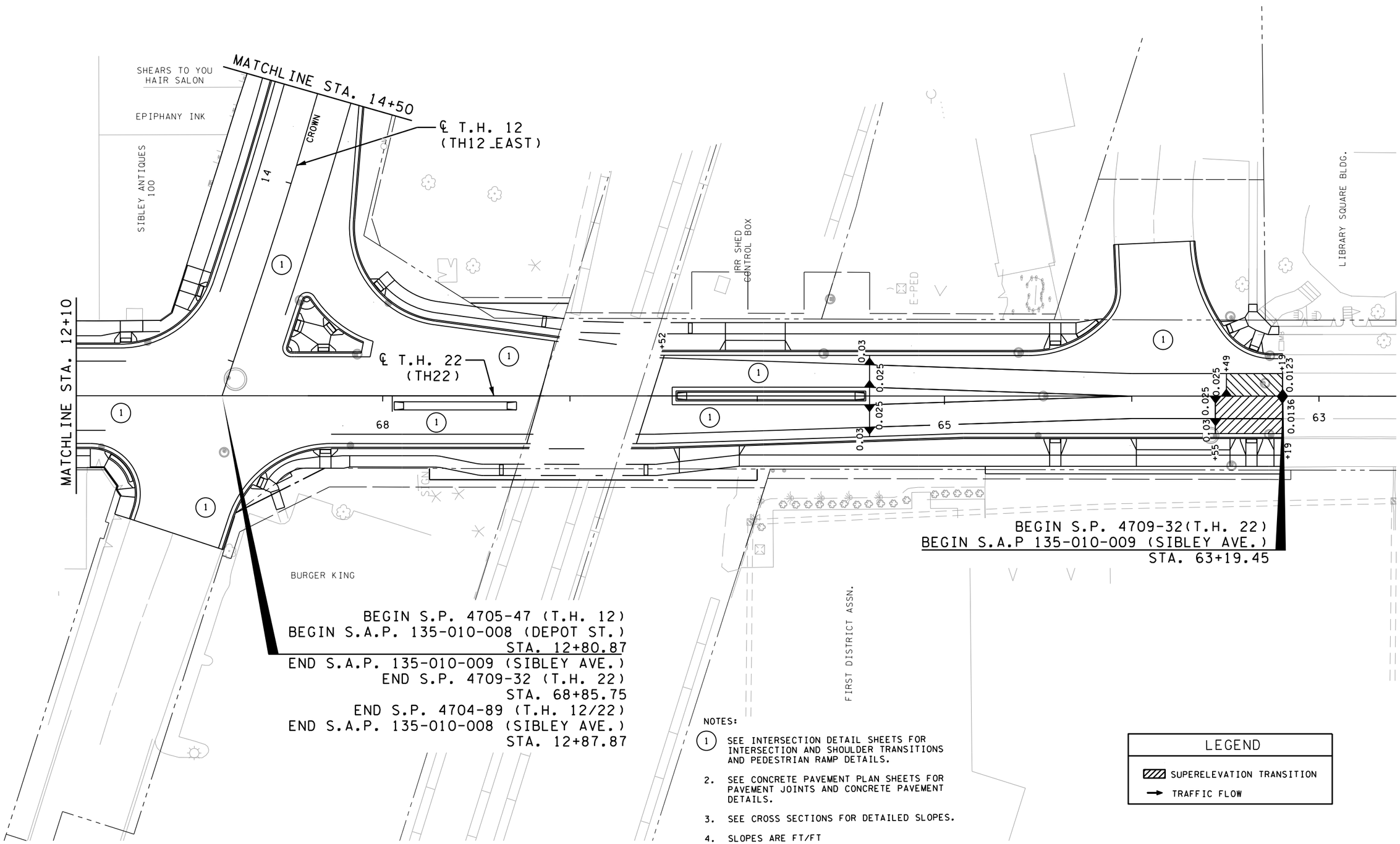
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CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
SUPERELEVATION PLAN

SHEET 128 OF 239



NOTES:

1. SEE INTERSECTION DETAIL SHEETS FOR INTERSECTION AND SHOULDER TRANSITIONS AND PEDESTRIAN RAMP DETAILS.
2. SEE CONCRETE PAVEMENT PLAN SHEETS FOR PAVEMENT JOINTS AND CONCRETE PAVEMENT DETAILS.
3. SEE CROSS SECTIONS FOR DETAILED SLOPES.
4. SLOPES ARE FT/FT

LEGEND

- SUPERELEVATION TRANSITION
- TRAFFIC FLOW

SCALE 0 25 50 FEET

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ANDREW H. KROG
LIC. NO. 54689 DATE 12-27-2018

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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 22
SUPERELEVATION PLAN

SHEET 129 OF 239

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N. MARSHALL AVE.

PIERCE INSURANCE AGENCY

SNAP FITNESS

WELLS FARGO

LANMO FARMS

N. HOLCOMBE AVE.

E. 1ST STREET

LAUNDROMAT

STA. 203+94.95
END S.A.P. 135-117-005
(HOLCOMBE AVE.)

MATCHLINE STA. 14+50

℄ T.H. 12
(TH12_EAST)

STA. 200+36.97
BEGIN S.A.P. 135-117-005
(HOLCOMBE AVE.)

STA. 21+36.33
END S.P. 4705-47 (T.H. 12)
END S.A.P. 135-117-008
(DEPOT ST.)

LEGEND

- SUPERELEVATION TRANSITION
- TRAFFIC FLOW

NOTES:

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2. SEE CONCRETE PAVEMENT PLAN SHEETS FOR PAVEMENT JOINTS AND CONCRETE PAVEMENT DETAILS.
3. SEE CROSS SECTIONS FOR DETAILED SLOPES.
4. SLOPES ARE FT/FT

SCALE 0 25 50 FEET

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S.A.P. 135-117-005

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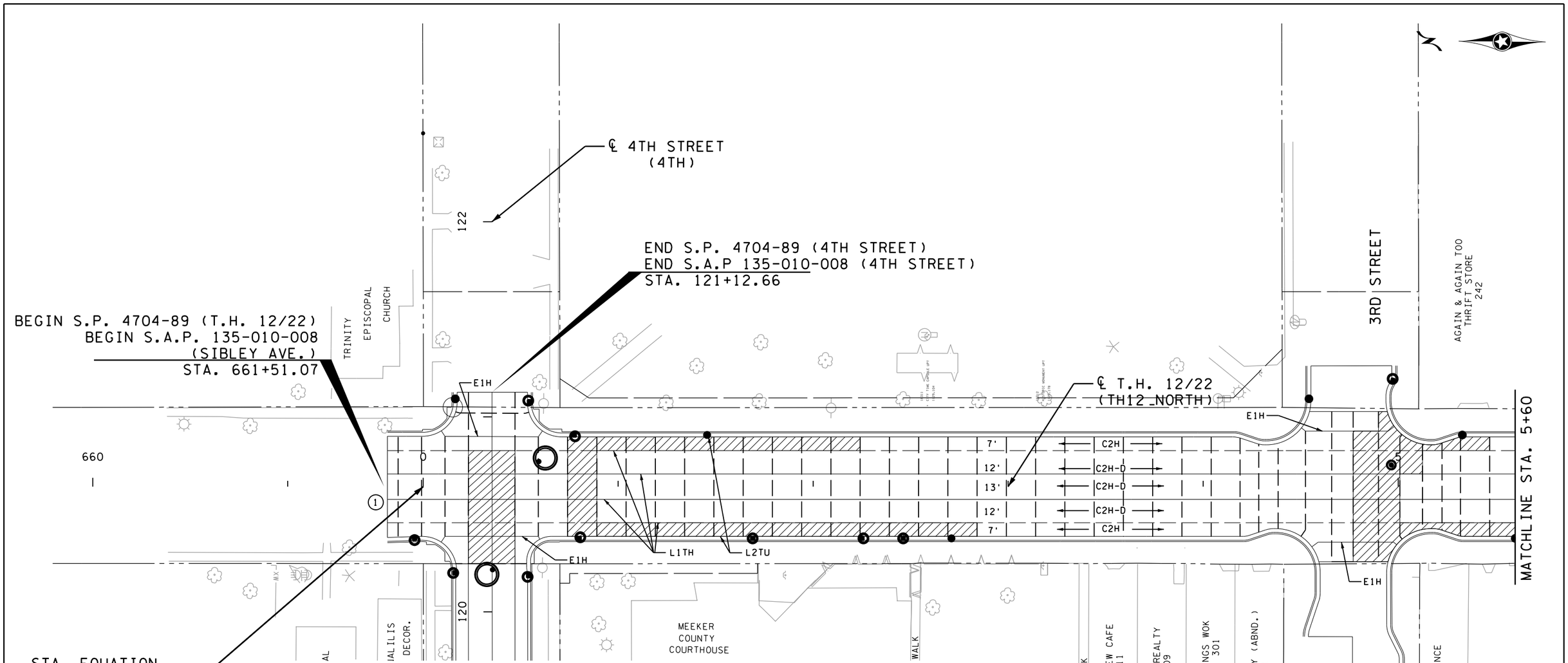
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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12
SUPERELEVATION PLAN

SHEET 130 OF 239

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STA. EQUATION
T.H. 12/22 (TH12_NORTH) BK 661+69.42=
T.H. 12/22 (TH12_NORTH) AH 0+00.00

SHEET NOTES:

1. CONSTRUCT PERMANENT HEADER SEE STANDARD PLATE 1150

GENERAL NOTES:

ALL DIMENSIONS SHOWN FOR ROADWAYS ON THE CONCRETE PAVING PLAN ARE ACTUAL PAVEMENT WIDTHS.

PAVEMENT JOINTS SHOWN ARE TO CONVEY INTENT. FINAL JOINT LOCATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

PERMANENT AND CONSTRUCTION HEADER JOINTS SHALL BE CONSIDERED INCIDENTAL.

L1TH JOINTS SHOWN IN THE PLAN SHALL BE CONSTRUCTED AS L2TU JOINTS WHEN NOT PAVED MONOLITHICALLY.

SUPPLEMENTAL PAVEMENT REINFORCEMENT, SEE STANDARD PLATE 1070.

8" NON-REINFORCED CONCRETE PAVEMENT

1.25" DOWELS

15' UNIFORM JOINT SPACING PANELS (TYP). 15' MAXIMUM.

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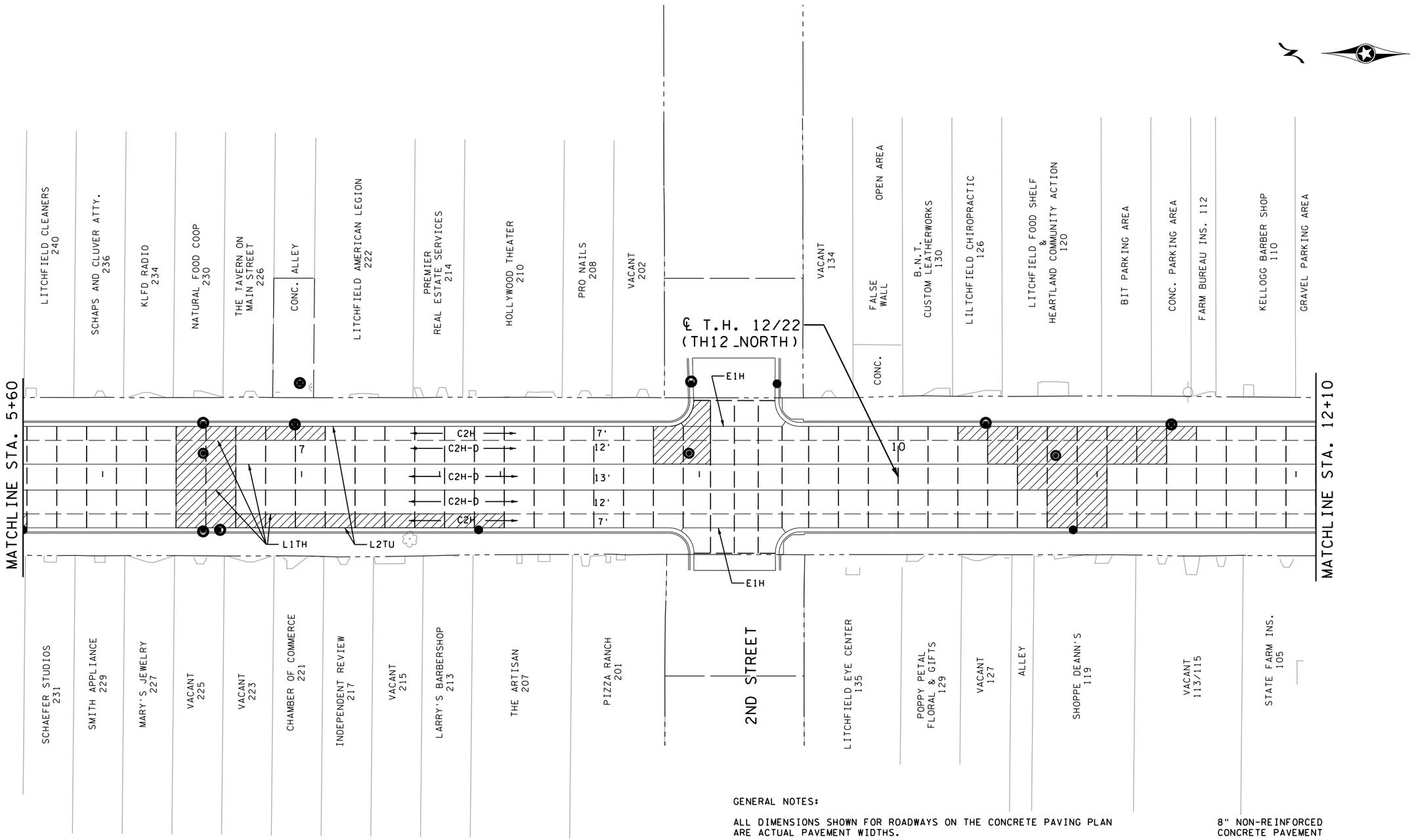
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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONCRETE PAVING PLAN

SHEET 131 OF 239



GENERAL NOTES:

ALL DIMENSIONS SHOWN FOR ROADWAYS ON THE CONCRETE PAVING PLAN ARE ACTUAL PAVEMENT WIDTHS.

PAVEMENT JOINTS SHOWN ARE TO CONVEY INTENT. FINAL JOINT LOCATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

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SUPPLEMENTAL PAVEMENT REINFORCEMENT, SEE STANDARD PLATE 1070.

8" NON-REINFORCED CONCRETE PAVEMENT

1.25" DOWELS

15' UNIFORM JOINT SPACING PANELS (TYP). 15' MAXIMUM.

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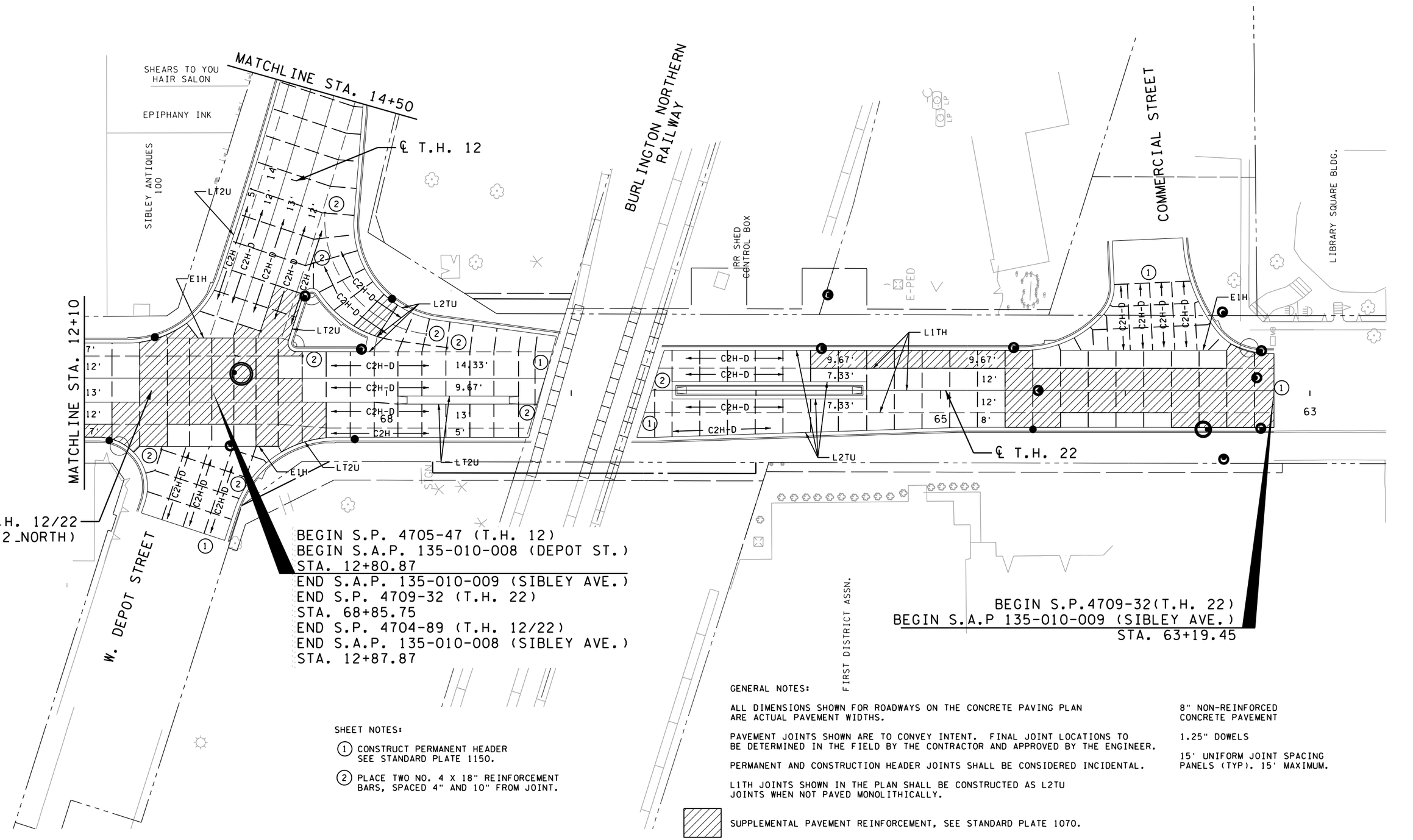
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CHECKED TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONCRETE PAVING PLAN

SHEET 132 OF 239



SHEET NOTES:

1. CONSTRUCT PERMANENT HEADER SEE STANDARD PLATE 1150.
2. PLACE TWO NO. 4 X 18" REINFORCEMENT BARS, SPACED 4" AND 10" FROM JOINT.

GENERAL NOTES:

ALL DIMENSIONS SHOWN FOR ROADWAYS ON THE CONCRETE PAVING PLAN ARE ACTUAL PAVEMENT WIDTHS.

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L1TH JOINTS SHOWN IN THE PLAN SHALL BE CONSTRUCTED AS L2TU JOINTS WHEN NOT PAVED MONOLITHICALLY.

SUPPLEMENTAL PAVEMENT REINFORCEMENT, SEE STANDARD PLATE 1070.

8" NON-REINFORCED CONCRETE PAVEMENT

1.25" DOWELS

15' UNIFORM JOINT SPACING PANELS (TYP). 15' MAXIMUM.

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S.A.P. 135-117-005

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DRAWN	TWB
CHECKED	TL

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONCRETE PAVING PLAN

SHEET 133 OF 239

SHEET NOTES:

(1) CONSTRUCT PERMANENT HEADER SEE STANDARD PLATE 1150

GENERAL NOTES:

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PAVEMENT JOINTS SHOWN ARE TO CONVEY INTENT. FINAL JOINT LOCATIONS TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

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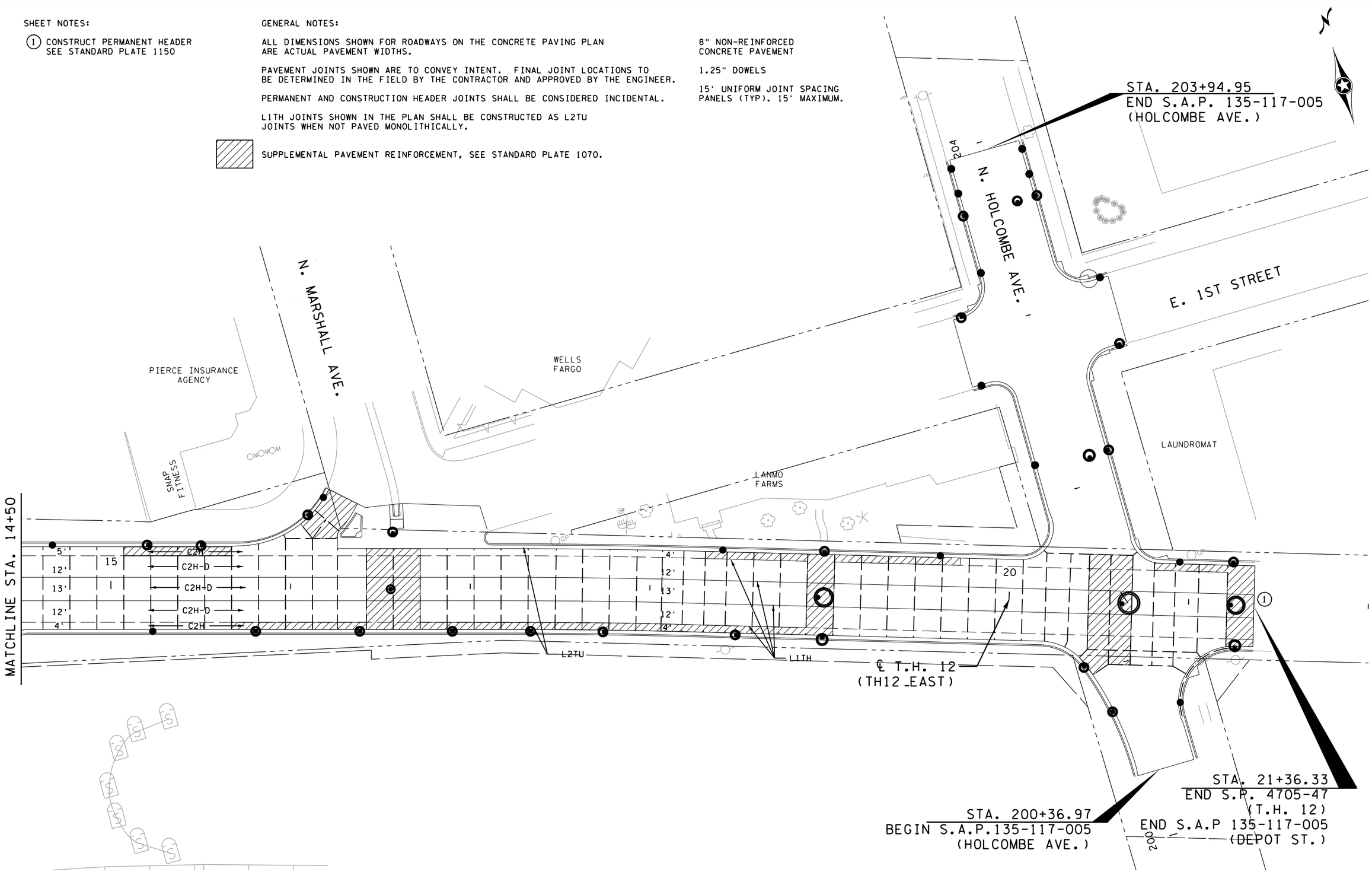
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SUPPLEMENTAL PAVEMENT REINFORCEMENT, SEE STANDARD PLATE 1070.

8" NON-REINFORCED CONCRETE PAVEMENT

1.25" DOWELS

15' UNIFORM JOINT SPACING PANELS (TYP). 15' MAXIMUM.



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S.A.P. 135-117-005

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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CONCRETE PAVING PLAN

SHEET 134 OF 239

NOTES & GUIDELINES

GENERAL STORM SEWER CONSTRUCTION NOTES:

1. ALL EXISTING SUBSURFACE UTILITIES SHOWN ON THE PLANS ARE DONE SO IN AN APPROXIMATE MANNER BASED UPON AVAILABLE RECORDS AND SURVEYED INFORMATION. THE CONTRACTOR SHALL TAKE NECESSARY ACTIONS TO BECOME AQUAINTED WITH ALL BURIED UTILITIES BY MARKING AND LOCATING THEM PRIOR TO COMMENCING WITH CONSTRUCTION.

   IN THE EVENT THAT A UTILITY IS DAMAGED BY THE CONTRACTOR DUE TO THE CONTRACTOR'S DISREGARD FOR LOCATING AND MARKING UTILITIES, THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH REPAIRING THE DAMAGED UTILITY TO THE UTILITY OWNERS REQUIREMENTS.

2. ALL STORM SEWER & CULVERT CONSTUCTION SHALL BE IN ACCORDANCE WITH THE REFERENCED SPECIFICATIONS OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2018 EDITION AND SPECIAL PROVISIONS CONTAINED IN THE PROPOSAL.

3. UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE PROPOSAL, ALL MATERIALS FOR STORM SEWER CONSTRUCTION SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:

   PIPE: REINFORCED CONCRETE PIPE, CLASS III, IV AND V (MN/DOT SPEC. 3236)

   PIPE JOINT GASKETS: PREFORMED RUBBER, TYPE A (MN/DOT SPEC. 3726)

   MANHOLES & CATCH BASINS: PRECAST CONCRETE TYPES AS SPECIFIED (MN/DOT SPEC. 2506)

   CASTING ASSEMBLIES: AS SPECIFIED (MN/DOT SPEC. 3321)

4. PROTECT AND PRESERVE IN-PLACE DRAINAGE STRUCTURES AND STORM SEWER PIPES THAT ARE TO BE REUSED IN THE WORK AREA. DAMAGE TO INPLACE STRUCTURES AND PIPE SHALL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER (INCIDENTAL). REPORT ANY UNMAPPED DRAINAGE INFRASTRUCTURE ENCOUNTERED TO THE ENGINEER.

5. NEW STORM SEWER PIPE, EDGE DRAIN CONNECTIONS, AND DITCH DRAINAGE CONNECTIONS TO IN-PLACE DRAINAGE AND EXISTING STRUCTURES SHALL BE DONE BY CORE-DRILLING AND PROVIDING A WATER-TIGHT CONNECTION. BULKHEAD AND SEAL ANY EXISTING PENETRATIONS WHERE STORM SEWER PIPING IS REMOVED FROM STRUCTURES.

6. ALL NEW STRUCTURES SHALL HAVE A MANUFACTURER PROVIDED KNOCKOUT. ALL NEW STRUCTURES GREATER THAN 3.7' IN BUILD HEIGHT SHALL HAVE STEPS. SEE DRAINAGE TABULATIONS FOR STRUCTURE TYPES. SEE STANDARD PLATE 4180 FOR STEPS.

7. SEE DETAILS FOR ALL TRENCHING, EXCAVATING, BACKFILLING, AND COMPACTING FOR CONSTRUCTING STORM SEWERS, CULVERTS, AND DRAINAGE STRUCTURES.SEE TABULATIONS AND DETAILS FOR PIPE BEDDING.

8. PROVIDE TEMPORARY EROSION CONTROL MEASURES DURING AND AFTER STORM SEWER CONSTRUCTION TO PREVENT SEDIMENT AND CONTAMINANTS FROM ENTERING THE STORM SEWER.

9. PRIOR TO STORM SEWER CONSTRUCTION THE CONTRACTOR SHALL VERIFY CRITICAL EXISTING PRIVATE UTILITY ELEVATIONS AND TIE-IN ELEVATIONS. EXPLORATORY EXCAVATION (COMMON LABORER, BACKHOE) MAY BE UTILIZED WHEN AUTHORIZED BY AND IN THE PRESENCE OF THE ENGINEER.

10. STORM SEWER SHALL BE 18" (MIN.) CLEARANCE AT WATERMAIN CROSSINGS. 4-INCH POLYSTYRENE INSULATION TO BE FURNISHED AND INSTALLED AT WATERMAIN CROSSINGS WHEN 18" CLEARANCE NOT MET. (INCIDENTAL) LESS THAN 4" OF SEPARATION WARRANTS THE RELOCATION OF THE UTILITY.

11. ALL PIPE SPECIFIED AS "PIPE CULVERT" SHALL BE TIED FROM UPSTREAM STRUCTURE TO OUTLET APRON (INCIDENTAL). STORM SEWER APRONS SHALL BE TIED AT APRON AND LAST 3 JOINTS (INCIDENTAL).

12. COORDINATE OTHER UTILITY INSTALLATIONS (WATER AND SANITARY SERVICES, OTHERS) TO ENSURE NO CONFLICTS ARE CREATED WITH THE PROPOSED STORM SEWER (INCIDENTAL).

13. ALL TEMPORARY CONNECTIONS, PIPING, PUMPING STRUCTURES, ETC.DUE TO CONTRACTOR STAGING OPERATIONS FOR THE PROJECT ARE INCIDENTAL.

14. IT IS RECOMMENDED THAT ALL STORM DRAIN BE BACKFILLED WITH THE SAME OR SIMILAR MATERIAL FOUND IN THE EXCAVATION THAT MEETS "SELECTED GRADING MATERIAL" AS DEFINED UNDER MNDOT STANDARD SPECIFICATION 2105.1.A.6 UNLESS OTHERWISE RECOMMENDED BY THE DISTRICT MATERIALS AND/OR SOILS ENGINEER. THE SELECT GRADING MATERIAL MAY BE EITHER PLASTIC OR GRANULAR SOIL AS LONG AS IT MEETS 2105.1.A.6 AND IS FREE OF CLODS, STONES OVER 3 INCHES, SOD, AND ROOTS.

15. SEE REMOVAL PLANS FOR TREES THAT ARE TO BE PROTECTED DURING CONSTRUCTION.

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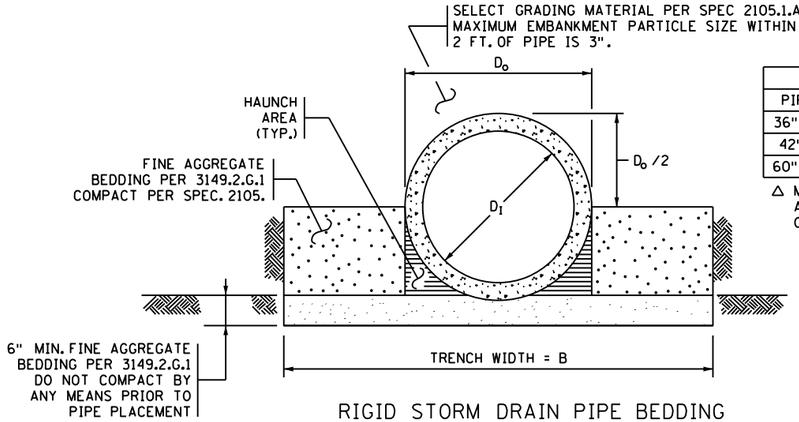
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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED	JDZ
DRAWN	LLK
CHECKED	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE PLAN & PROFILES

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TRENCH BASE WIDTH △	
PIPE DIA. D_1	TRENCH WIDTH B
36" OR LESS	D_o + 24"
42" TO 54"	1.5 x D_o
60" OR OVER	D_o + 36"

△ MODIFY TRENCH WIDTH & SLOPE AS NECESSARY TO COMPLY WITH OSHA REQUIREMENTS.

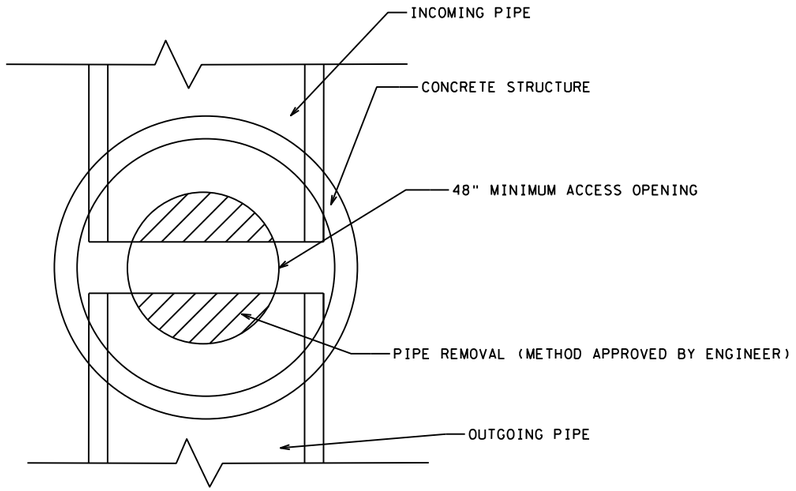
RIGID STORM DRAIN PIPE BEDDING

CONSTRUCTION SEQUENCE

1. LOOSELY PLACE 6" OF FINE AGGREGATE BEDDING MATERIAL TO GRADE. DO NOT COMPACT PRIOR TO PIPE PLACEMENT.
2. FOR PIPES WITH BELL, REMOVE MATERIAL IN BELL AREA PRIOR TO PLACEMENT.
3. FINISH AND INSTALL PIPE TO GRADE.
4. AFTER INSTALLATION OF PIPE, PLACE ADDITIONAL FINE AGGREGATE BEDDING AND COMPACT THE FULL LENGTH ON BOTH SIDES OF THE PIPE UNDERNEATH THE HAUNCH AREA BY FIRST SHOVEL SLICING (MANUALLY SHOVE THE BLADE END OF SHOVEL AT AN ANGLE DOWN THE ENTIRE LENGTH OF HAUNCH UNDER PIPE) THEN COMPACT THE HAUNCH AT AN ANGLE USING A POWERED MECHANICAL OR PNEUMATIC DEVICE (I.E. POLE TAMPER, JUMPING JACK OR SIMILAR). COMPACT THE REMAINING MATERIAL OUTSIDE THE HAUNCH AREA TO THE REQUIREMENTS OF SPEC. 2105, ENSURING THAT THE ENTIRE LENGTH OF PIPE IS SUPPORTED UNIFORMLY BY BEDDING.
5. PLACE AND COMPACT BACKFILL EVENLY AND SIMULTANEOUSLY IN 6" LIFTS ON EACH SIDE OF THE PIPE UP TO THE MID-HEIGHT WHEN COMPACTED.
6. COMPLETE REMAINING BACKFILL.

NOTES

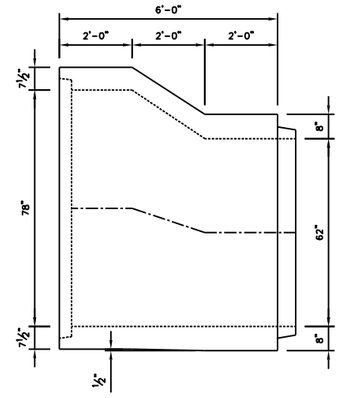
EXCAVATE & CONSTRUCT ALL TRENCHES AND SLOPES PER OSHA REQUIREMENTS.
PIPE SIZE IS BASED ON THE NOMINAL INSIDE DIAMETER.
PROTECT ALL PIPE DURING CONSTRUCTION PER SPEC. 2501 OR 2503.



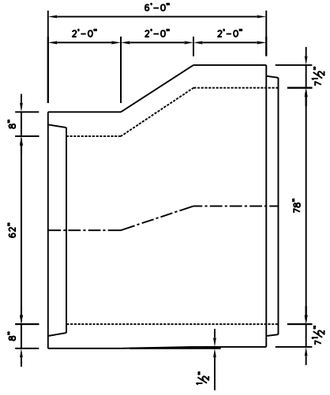
MANHOLE MODIFICATIONS

MANHOLE MODIFICATION NOTES

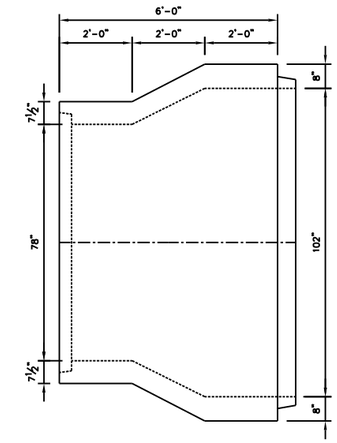
CONTRACTOR SHALL MODIFY PIPE ENDS AS NECESSARY TO PROVIDE A 48" ACCESS OPENING WHEN ACCESSING THE BOTTOM OF THE STRUCTURE FROM THE MANHOLE LID.
PIPE MODIFICATIONS SHALL NOT IMPACT THE STRUCTURAL INTEGRITY OF THE PIPE OR STRUCTURE.
NO DIRECT COMPENSATION WILL BE MADE FOR PIPE END MODIFICATIONS.



ELEVATION VIEW

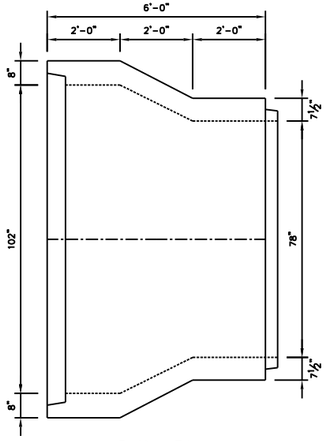


ELEVATION VIEW



PLAN VIEW

78" FEMALE TO 102" MALE
6' LAY LENGTH



PLAN VIEW

102" FEMALE TO 78" MALE
6' LAY LENGTH

78" RC TO 102" RC ARCH TRANSITION

78" RC TO 102" RC ARCH TRANSITION NOTES

1. TRANSITION PIECES SHALL HAVE REINFORCEMENT EQUIVALENT TO THE PIPE SIZE AND CLASS (CL III) OF THE ADJACENT PIPE. SEE STANDARD PLATE 3000 (INCIDENTAL).
2. SHOP DRAWING SUBMITTAL IS REQUIRED PRIOR TO FABRICATION (INCIDENTAL).
3. TRANSITION PIECES SHALL BE PART OF SITE PLAN SUBMITTAL FOR AREA (SEE DRAINAGE PLAN SHEETS).
4. BEDDING REQUIREMENTS SHALL MATCH PIPE BEDDING REQUIREMENTS.
5. NO DIRECT PAYMENT IS MADE FOR TRANSITION PIECES. PAYMENT IS INCLUDED IN 102" SPAN RC PIPE-ARCH SEWER CLASS IVA PAY ITEM.

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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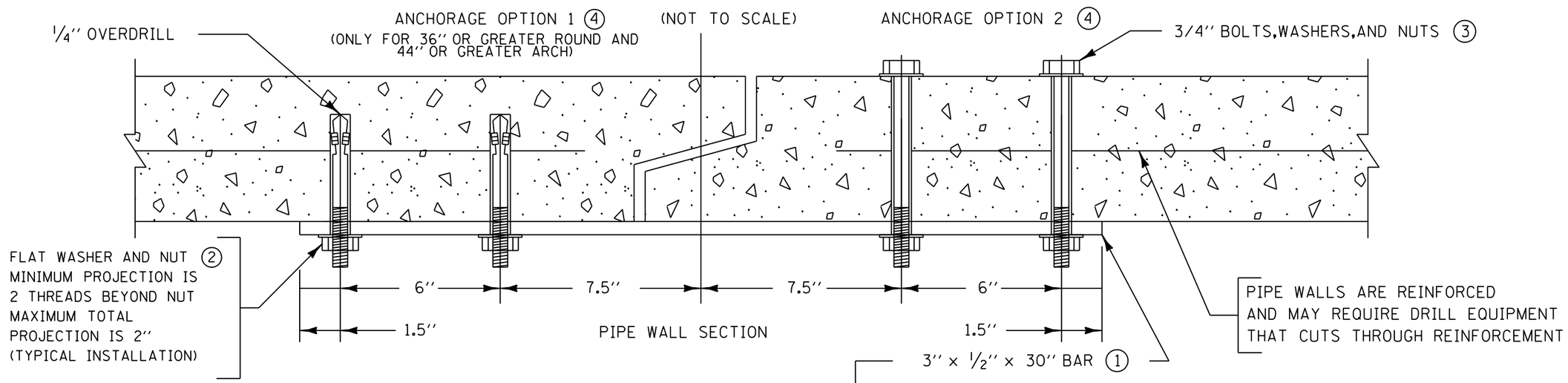
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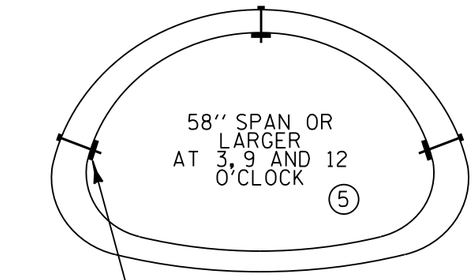
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T.H. 12/22 RECONSTRUCTION
DRAINAGE PLAN & PROFILES

SHEET 136 OF 239

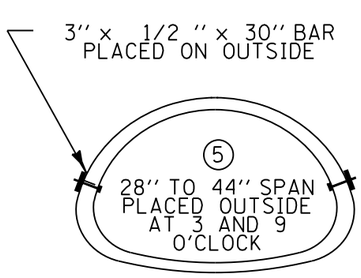
PIPE TIE - FLAT BAR STYLE

APPLIES TO THE FIRST THREE JOINTS FROM ANY CONCRETE PIPE APRON ON FULL PIPE REPLACEMENTS.
ALSO APPLIES ONLY TO AFFECTED JOINTS AT PARTIAL PIPE AND APRON REPLACEMENT LOCATIONS.
PAID FOR AS PIPE TIES - SEE DRAINAGE TABULATIONS FOR LOCATIONS

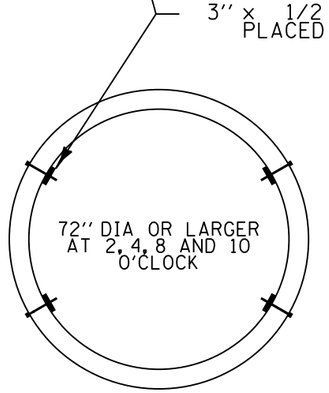




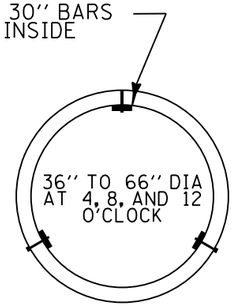
ARCH PIPE



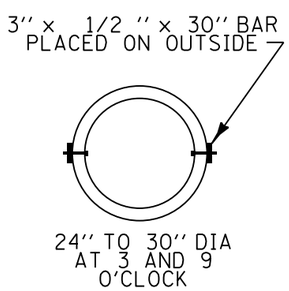
ARCH PIPE



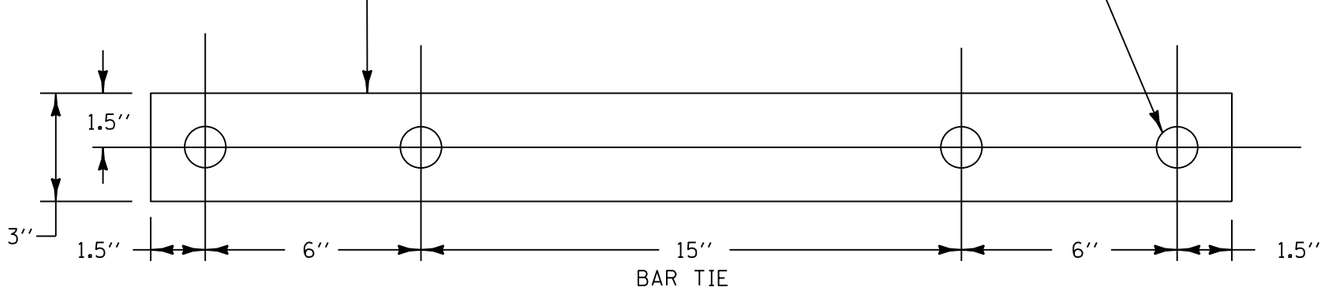
ROUND PIPE



ROUND PIPE



ROUND PIPE



BAR TIE

(1) BAR SHALL MEET REQUIREMENT OF SPEC. 3306. GALVANIZE AS PER SPEC. 3392 OR STAINLESS STEEL.
(2) 3/4'' BOLTS SHALL BE HILTI KWIKBOLT II EXPANSION ANCHORS, RED HEAD WEDGE ANCHORS, OR APPROVED EQUAL. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER SPEC. 3392 OR STAINLESS STEEL.
(3) 3/4'' BOLTS FOR ALL PIPE SIZES. BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED PER SPEC. 3392 OR STAINLESS STEEL.
(4) THE CONTRACTOR MAY CHOOSE EITHER ANCHORAGE TYPE WHEN ALLOWED.
(5) PLACE 3 AND 9 O'CLOCK BARS JUST ABOVE HAUNCH

NOTE:
TIE ALL REMAINING JOINTS ON NEW CONCRETE PIPES AS PER STANDARD PLATE 3145.
ALL TIES INSIDE THE PIPE SHALL BE TRIMMED SO AS NOT TO EXTEND MORE THAN 1.5'' BEYOND THE CONCRETE SURFACE. PIPE TIES & ASSOCIATED WORK IS INCIDENTAL.

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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DRAINAGE PLAN & PROFILES

SHEET 136A OF 239

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SEE TURF PLANS FOR OUTLET STABILIZATION

JEWITTS CREEK

PROTECT EXIST CULVERTS DURING CONSTRUCTION (INCIDENTAL).

BEGIN S.P. 4704-89 (4TH STREET)
BEGIN S.A.P. 135-010-008 (4TH STREET)
STA. 100+16.38

℄ 4TH STREET (4TH)

H.P.
4TH STREET
STA. 105+62.49
ELEV. 1120.80

P.I.
4TH STREET
STA. 106+19.78
ELEV. 1120.68

MATCHLINE STA. 106+25

N. DONNELLY AVE.

N. AUSTIN AVE.

1 EA-CONNECT TO EXIST STM(18")

1 EA-CONNECT TO EXIST STM(36")

LEGEND

- PROPOSED SANITARY MANHOLE
- PROPOSED PIPE APRON
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED CULVERT/STORM SEWER
- EXISTING CULVERT/STORM SEWER
- EXISTING DRAINAGE STRUCTURE
- 4" PERF TP PIPE
- PROPOSED WATERMAIN
- INPLACE WATERMAIN
- RANDOM RIPRAP CL III
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- STRUCTURE NUMBER
- DELINEATED WETLAND
- PROPOSED SANITARY SEWER
- INPLACE SANITARY SEWER

GENERAL NOTES:

A SEE INTERSECTION DETAILS FOR DRAINAGE PATTERNS IN INTERSECTIONS.

B SEE REMOVAL PLANS FOR TREE PROTECTION LOCATIONS. PROTECT TREES DURING STORM SEWER INSTALLATION (INCIDENTAL).

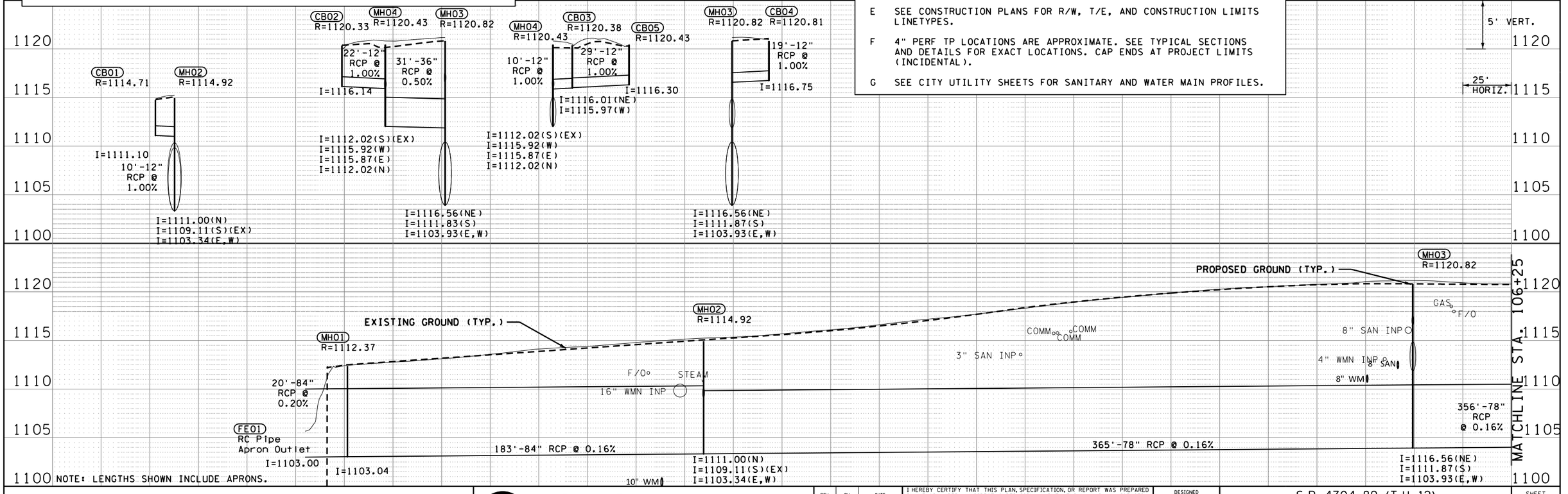
C AT ALL "CONNECT TO EXIST STM" LOCATIONS FIELD VERIFY ELEVATION AND LOCATION PRIOR TO CONSTRUCTION (INCIDENTAL).

D ALL 12" AND 15" PIPE IS CLASS V. ALL OTHER PIPE IS CLASS III UNLESS OTHERWISE NOTED IN THE STORM SEWER PROFILES.

E SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.

F 4" PERF TP LOCATIONS ARE APPROXIMATE. SEE TYPICAL SECTIONS AND DETAILS FOR EXACT LOCATIONS. CAP ENDS AT PROJECT LIMITS (INCIDENTAL).

G SEE CITY UTILITY SHEETS FOR SANITARY AND WATER MAIN PROFILES.



NOTE: LENGTHS SHOWN INCLUDE APRONS.

0 25 50
SCALE FEET

S.A.P. 135-010-008
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S.A.P. 135-117-005

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T.H. 12/22 RECONSTRUCTION - 4TH STREET
DRAINAGE PLAN & PROFILES

SHEET 137 OF 239

CRITICAL UTILITY CROSSING!
SUBMIT SITE PLAN TO SHOW HOW FORCEMAIN WILL BE PROTECTED DURING STORM INSTALLATION. FIELD VERIFY FORCEMAIN PRIOR TO FABRICATING STORM SEWER STRUCTURES (INCIDENTAL). ADJUST PIPE GRADES AS NECESSARY TO AVOID UTILITY CONFLICT.(INCIDENTAL).

℄ 4TH STREET (4TH)

1 EA-CONNECT TO EXIST STM(15")

MATCHLINE STA. 106+25

MATCHLINE STA. 112+75

MH06 CB09 MH05 CB08 CB06 CB07

108 110

N. SWIFT AVE.

GENERAL NOTES:

A SEE INTERSECTION DETAILS FOR DRAINAGE PATTERNS IN INTERSECTIONS.

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G SEE CITY UTILITY SHEETS FOR SANITARY AND WATER MAIN PROFILES.

LEGEND

PROPOSED SANITARY MANHOLE	RANDOM RIPRAP CL III
PROPOSED PIPE APRON	PROPOSED FLOW ARROW
PROPOSED DRAINAGE STRUCTURE	EXISTING FLOW ARROW
PROPOSED CULVERT/STORM SEWER	1000 STRUCTURE NUMBER
EXISTING CULVERT/STORM SEWER	DELINEATED WETLAND
EXISTING DRAINAGE STRUCTURE	PROPOSED SANITARY SEWER
4" PERF TP PIPE	INPLACE SANITARY SEWER
PROPOSED WATERMAIN	
INPLACE WATERMAIN	

CB06 R=1122.09
CB07 R=1122.10
CB08 R=1122.46
MH05 R=1122.86
33'-12" RCP @ 1.00%
28'-12" RCP @ 1.00%
22'-12" RCP @ 1.00%
I=1117.50
I=1117.17
I=1116.90
I=1116.11(NW)
I=1116.68(SW)
I=1104.58(E,W)

MH05 R=1122.86
CB09 R=1122.45
MH06 R=1122.43
21'-18" RCP @ 1.01%
30'-18" RCP @ 0.97%
I=1116.11(NW)
I=1116.68(SW)
I=1104.58(E,W)
I=1116.97(N)(EX)
I=1116.87(SE)
I=1116.58(NW)
I=1116.33(SE)

5' VERT.
25' HORIZ.

1120 1115 1110 1105

1125 1120 1115 1110 1105 1100

PROPOSED GROUND (TYP.)
EXISTING GROUND (TYP.)
MATCHLINE STA. 106+25
MATCHLINE STA. 112+75
MH05 R=1122.86
COMM COMM PWR COMM
GAS
8" SAN INP
8" SAN
UNKNOWN WMN INP
8" WM
18" FORCEMAIN
24' 78" RCP @ 0.16%
102" ARCH X 78" RC TRANSITION. SEE DETAILS.
102" ARCH X 78" RC TRANSITION. SEE DETAILS.
I=1104.49
I=1104.54
356'-78" RCP @ 0.16%
341'-78" RCP CL IV @ 0.33%
32'-102" RC PIPE-ARCH @ 0.16%
I=1116.11(NW)
I=1116.68(SW)
I=1104.58(E,W)

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S.A.P. 135-010-009
S.A.P. 135-117-005

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DRAINAGE PLAN & PROFILES

SHEET 138 OF 239

MATCHLINE STA. 112+75

℄ 4TH STREET (4TH)

N. MILLER AVE.

MH07

115

H.P.
4TH STREET
STA. 117+61.43
ELEV. 1129.84

MH08

CB10

CB11

119

N. RAMSEY AVE.

MATCHLINE STA. 119+50

LEGEND

PROPOSED SANITARY MANHOLE	RANDOM RIPRAP CL III
PROPOSED PIPE APRON	PROPOSED FLOW ARROW
PROPOSED DRAINAGE STRUCTURE	EXISTING FLOW ARROW
PROPOSED CULVERT/STORM SEWER	1000 STRUCTURE NUMBER
EXISTING CULVERT/STORM SEWER	DELINEATED WETLAND
EXISTING DRAINAGE STRUCTURE	PROPOSED SANITARY SEWER
4" PERF TP PIPE	INPLACE SANITARY SEWER
PROPOSED WATERMAIN	
INPLACE WATERMAIN	

GENERAL NOTES:

A SEE INTERSECTION DETAILS FOR DRAINAGE PATTERNS IN INTERSECTIONS.

B SEE REMOVAL PLANS FOR TREE PROTECTION LOCATIONS. PROTECT TREES DURING STORM SEWER INSTALLATION (INCIDENTAL).

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F 4" PERF TP LOCATIONS ARE APPROXIMATE. SEE TYPICAL SECTIONS AND DETAILS FOR EXACT LOCATIONS. CAP ENDS AT PROJECT LIMITS (INCIDENTAL).

G SEE CITY UTILITY SHEETS FOR SANITARY AND WATER MAIN PROFILES.

5' VERT.
25' HORIZ.

PROPOSED GROUND (TYP.)
EXISTING GROUND (TYP.)

MH07 R=1126.50
MH08 R=1129.53
CB11 R=1129.26
CB10 R=1128.63

MATCHLINE STA. 112+75
MATCHLINE STA. 119+50

GAS 4.5" STEAM
8" WM
4" WMN INP
8" SAN
12" SAN
12" SAN INP
12" SAN INP
GAS GAS
COMM COMM
PWR
6" WM
6" WMN INP
F/O
COMM
23'-12" RCP @ 3.92%
38'-12" COMM RCP F/@ 0.99%
10" WM
4" WMN INP
10" WMN INP I=1124.20
I=1124.57
8" SAN INP
12" SAN INP
COMM GAS

341'-78" RCP CL IV @ 0.33%
I=1105.72(E,W)
361'-78" RCP CL IV @ 0.35%
I=1123.30(SE)
I=1106.98(E,W)
318'-78" RCP CL IV @ 0.35%

1140 1135 1130 1125 1120 1115 1110 1105 1100 1095

0 25 50
SCALE FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED	JDZ
DRAWN	LLK
CHECKED	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
DRAINAGE PLAN & PROFILES

SHEET 139 OF 239

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BEGIN S.P. 4704-89 (T.H. 12/22)
BEGIN S.A.P. 135-010-008 (SIBLEY AVE.)
STA. 661+51.07

END S.P. 4704-89 (4TH STREET)
END S.A.P. 135-010-008 (4TH STREET)
STA. 121+12.66

℄ T.H. 12/22

3RD STREET

H.P.
T.H. 12
STA. 5+47.15
ELEV. 1130.98

L.P.
4TH STREET
STA. 120+89.89
ELEV. 1127.05

L.P.
4TH STREET
STA. 120+88.70
ELEV. 1128.09

660

1 EA-CONNECT TO EXIST STM (15" RCP)

CAP

0

℄ 4TH STREET (4TH)

120'

MATCHLINE STA. 119+50

MATCHLINE STA. 5+60

CB12 CB13 CB14 CB15 CB16 CB17 CB18 CB19 CB20 CB21 CB23 CB24 CB25 CB26 CB27 CB89

MH09 MH10 MH11

GENERAL NOTES:

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G SEE CITY UTILITY SHEETS FOR SANITARY AND WATER MAIN PROFILES.

LEGEND

- PROPOSED SANITARY MANHOLE
- PROPOSED PIPE APRON
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED CULVERT/STORM SEWER
- EXISTING CULVERT/STORM SEWER
- EXISTING DRAINAGE STRUCTURE
- 4" PERF TP PIPE
- PROPOSED WATERMAIN
- INPLACE WATERMAIN
- RANDOM RIPRAP CL III
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- (1000) STRUCTURE NUMBER
- DELINEATED WETLAND
- PROPOSED SANITARY SEWER
- INPLACE SANITARY SEWER

5' VERT.

25' HORIZ.

1150 1145 1140 1135 1130 1125 1120 1115 1110 1105

PROPOSED GROUND (TYP.)

EXISTING GROUND (TYP.)

MH09 R=1128.30

MH10 R=1128.24

MH11 R=1130.52

MATCHLINE STA. 119+50

MATCHLINE STA. 5+60

°GAS °F/O

F/O°COMM COMM

6" WM 8" WM 8" WM

8" WM

10" SAN 10" SAN

318'-78" RCP CL IV @ 0.35%

67'-78" RCP CL IV @ 0.35%

434'-72" RCP CL IV @ 0.35%

154'-72" RCP CL IV @ 0.35%

I=1122.00(N)
I=1121.88(S)
I=1108.09(SE,W)

I=1108.32(NW,S)
I=1122.21(SE)

I=1125.56(SE)
I=1124.28(E)
I=1109.84(N,S)

0 25 50
SCALE FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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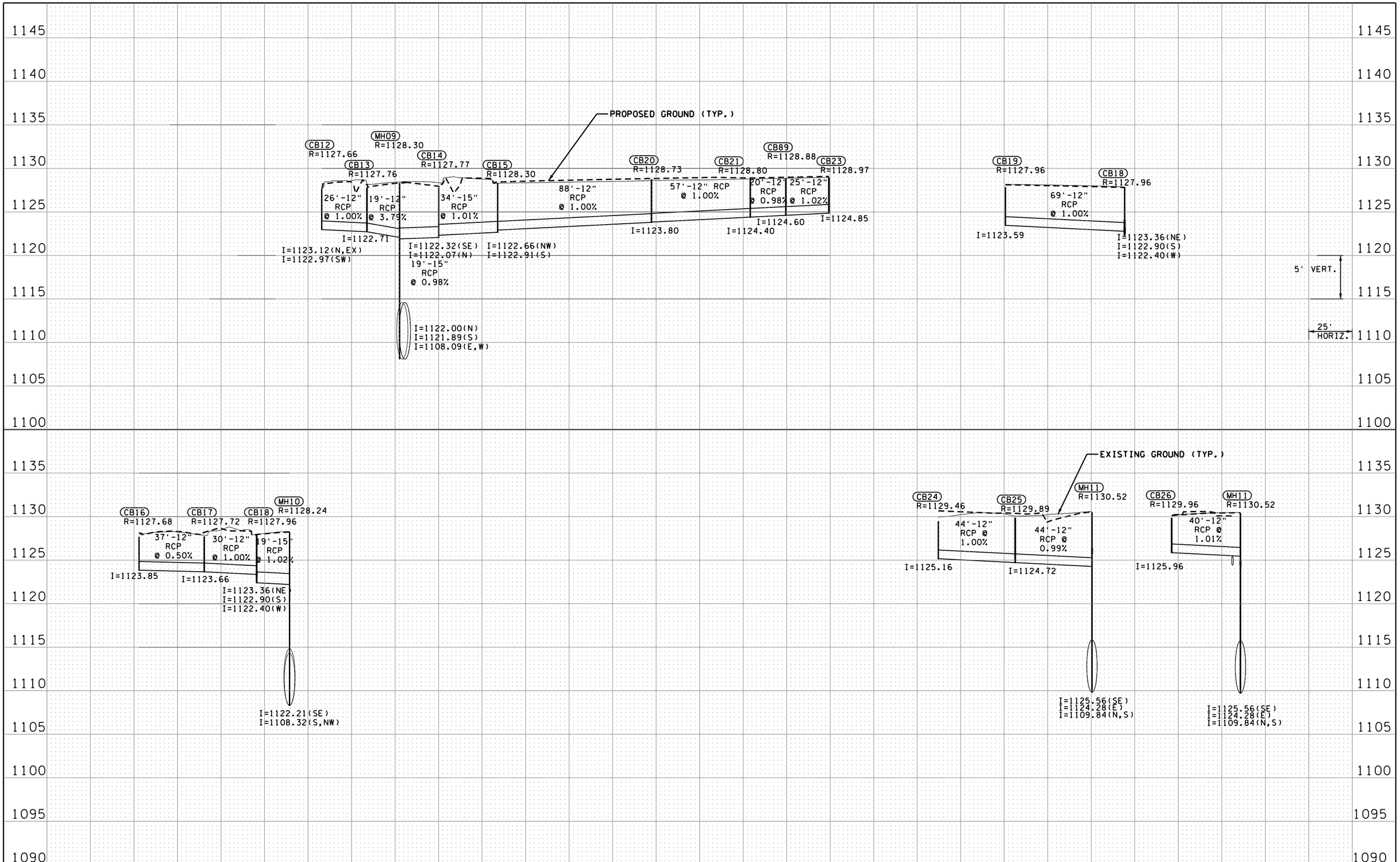
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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED JDZ
DRAWN LLK
CHECKED ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
DRAINAGE PLAN & PROFILES

SHEET 140 OF 239



VERTICAL SCALE 0 5 10 FEET

HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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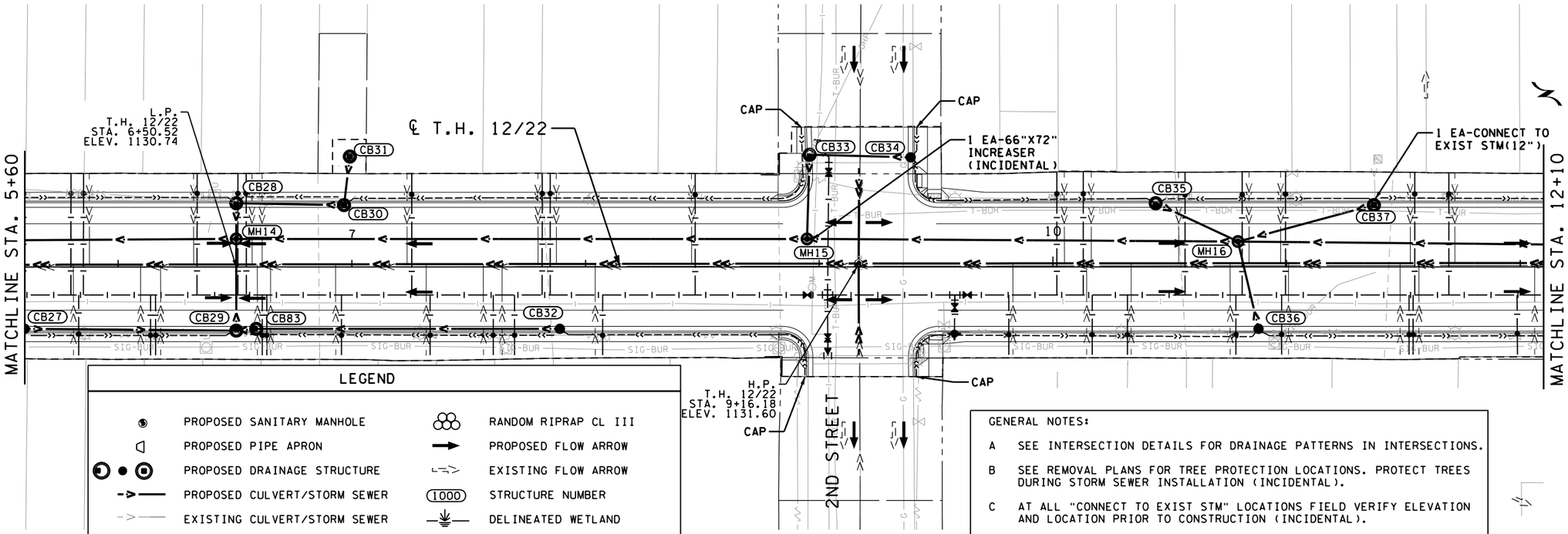
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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE PLAN & PROFILES

SHEET 141 OF 239



LEGEND

- PROPOSED SANITARY MANHOLE
- PROPOSED PIPE APRON
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED CULVERT/STORM SEWER
- EXISTING CULVERT/STORM SEWER
- EXISTING DRAINAGE STRUCTURE
- 4" PERF TP PIPE
- PROPOSED WATERMAIN
- INPLACE WATERMAIN
- RANDOM RIPRAP CL III
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- (1000) STRUCTURE NUMBER
- DELINEATED WETLAND
- PROPOSED SANITARY SEWER
- INPLACE SANITARY SEWER

GENERAL NOTES:

A SEE INTERSECTION DETAILS FOR DRAINAGE PATTERNS IN INTERSECTIONS.

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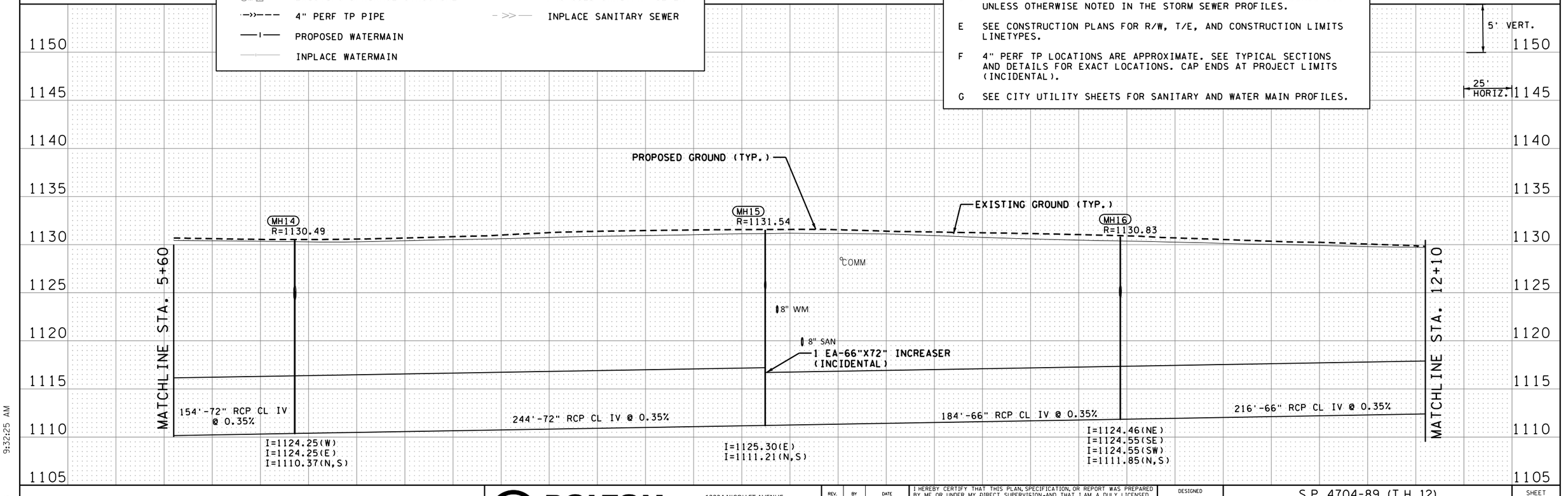
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0 25 50
SCALE FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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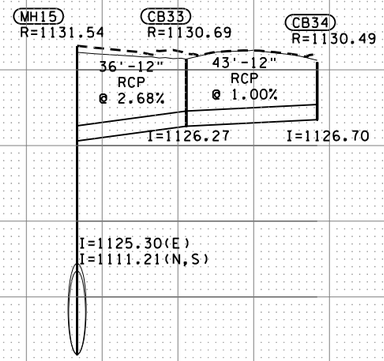
ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

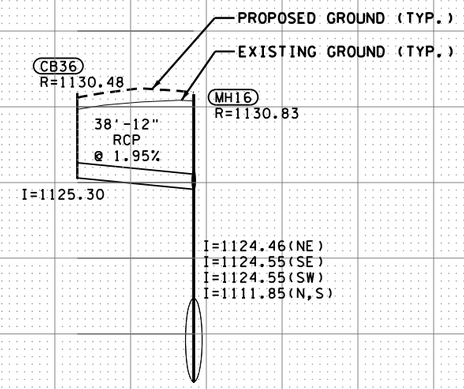
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DRAWN	LLK
CHECKED	ACR

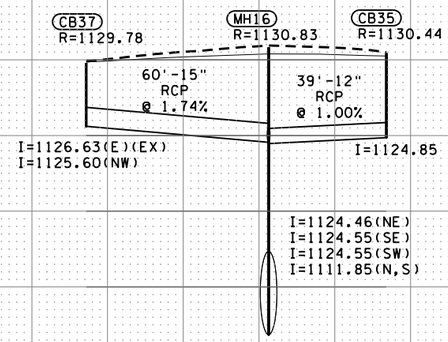
S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
DRAINAGE PLAN & PROFILES

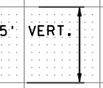
SHEET 142 OF 239

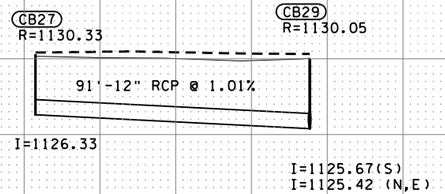
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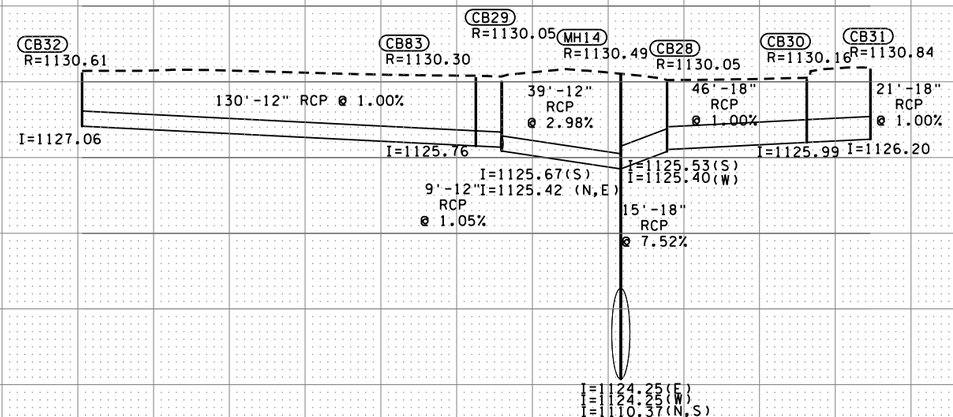












VERTICAL SCALE 0 5 10 FEET

HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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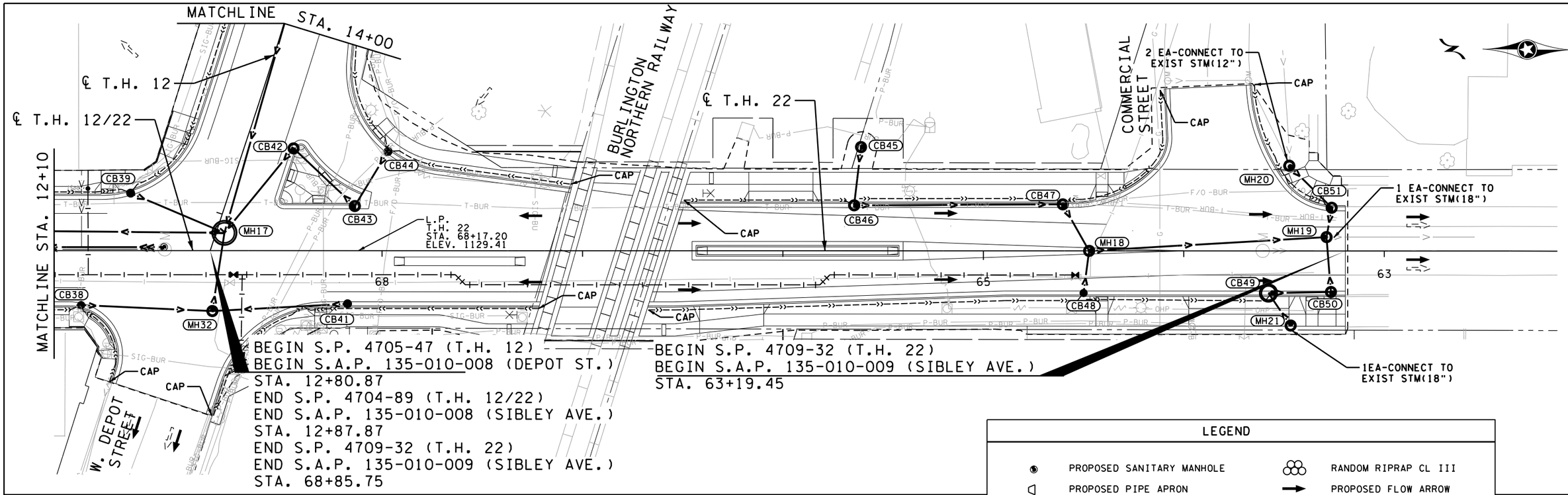
ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED	JDZ
DRAWN	LLK
CHECKED	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE PLAN & PROFILES

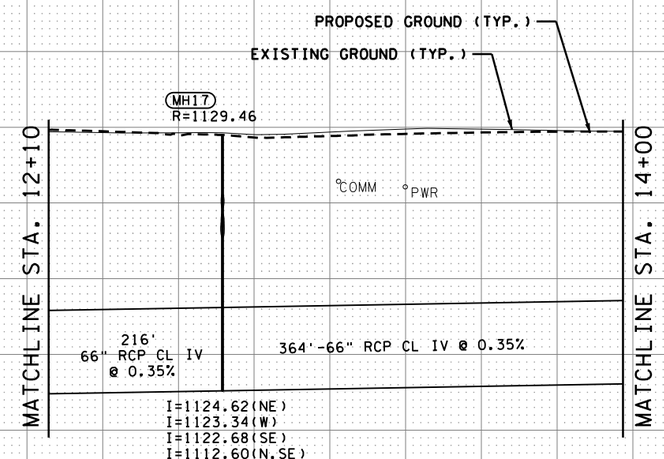
SHEET 143 OF 239

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LEGEND

PROPOSED SANITARY MANHOLE	RANDOM RIPRAP CL III
PROPOSED PIPE APRON	PROPOSED FLOW ARROW
PROPOSED DRAINAGE STRUCTURE	EXISTING FLOW ARROW
PROPOSED CULVERT/STORM SEWER	(1000) STRUCTURE NUMBER
EXISTING CULVERT/STORM SEWER	DELINEATED WETLAND
EXISTING DRAINAGE STRUCTURE	PROPOSED SANITARY SEWER
4" PERF TP PIPE	INPLACE SANITARY SEWER
PROPOSED WATERMAIN	
INPLACE WATERMAIN	



1150 1145 1140 1135 1130 1125 1120 1115 1110 1105

5' VERT.

25' HORIZ.

GENERAL NOTES:

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SCALE 0 25 50 FEET

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S.A.P. 135-010-009
S.A.P. 135-117-005

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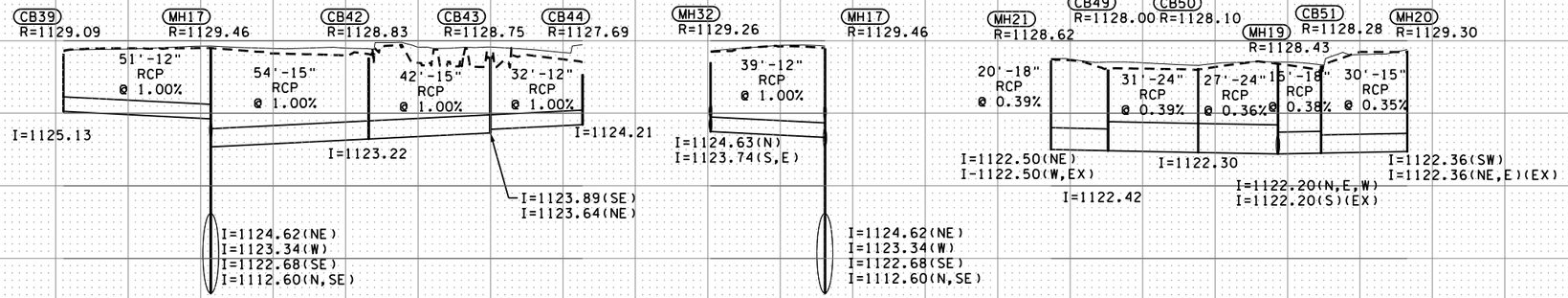
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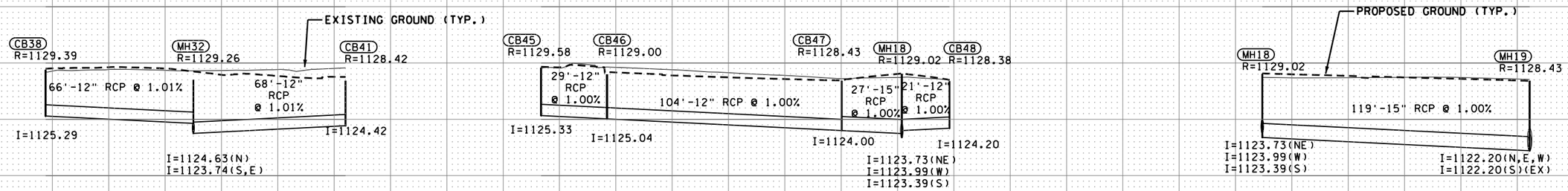
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DRAWN LLK
CHECKED ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 22
DRAINAGE PLAN & PROFILES

SHEET 144 OF 239





VERTICAL SCALE 0 5 10 FEET

HORIZONTAL SCALE 0 25 50 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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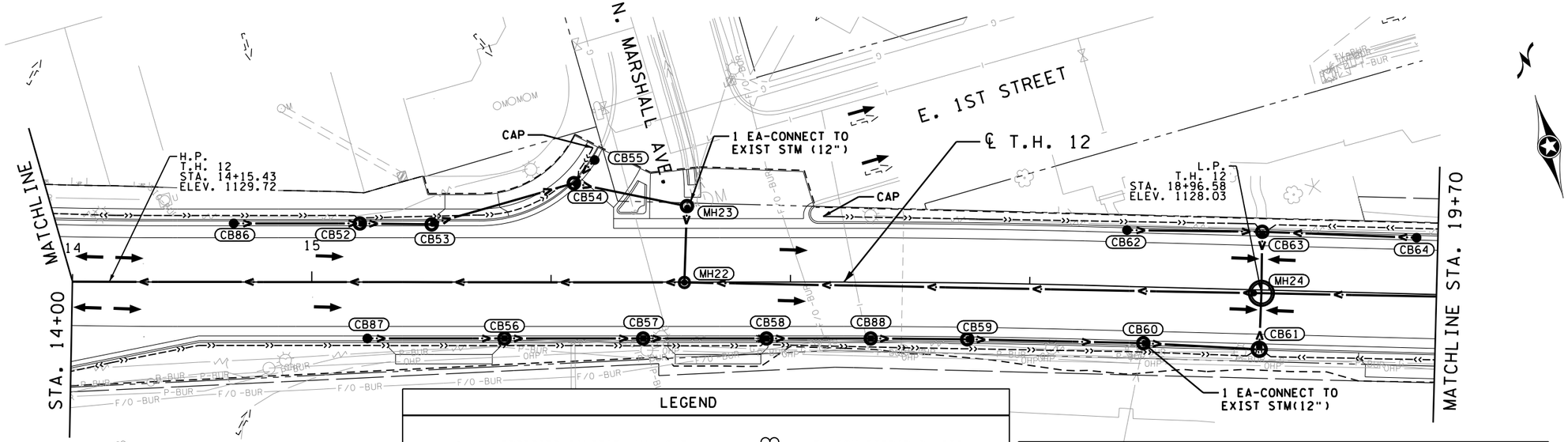
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DESIGNED	DRAWN	CHECKED
JDZ	LLK	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE PLAN & PROFILES

SHEET 145 OF 239



LEGEND

- PROPOSED SANITARY MANHOLE
- PROPOSED PIPE APRON
- PROPOSED DRAINAGE STRUCTURE
- PROPOSED CULVERT/STORM SEWER
- EXISTING CULVERT/STORM SEWER
- EXISTING DRAINAGE STRUCTURE
- 4" PERF TP PIPE
- PROPOSED WATERMAIN
- INPLACE WATERMAIN
- RANDOM RIPRAP CL III
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- (1000) STRUCTURE NUMBER
- DELINEATED WETLAND
- PROPOSED SANITARY SEWER
- INPLACE SANITARY SEWER

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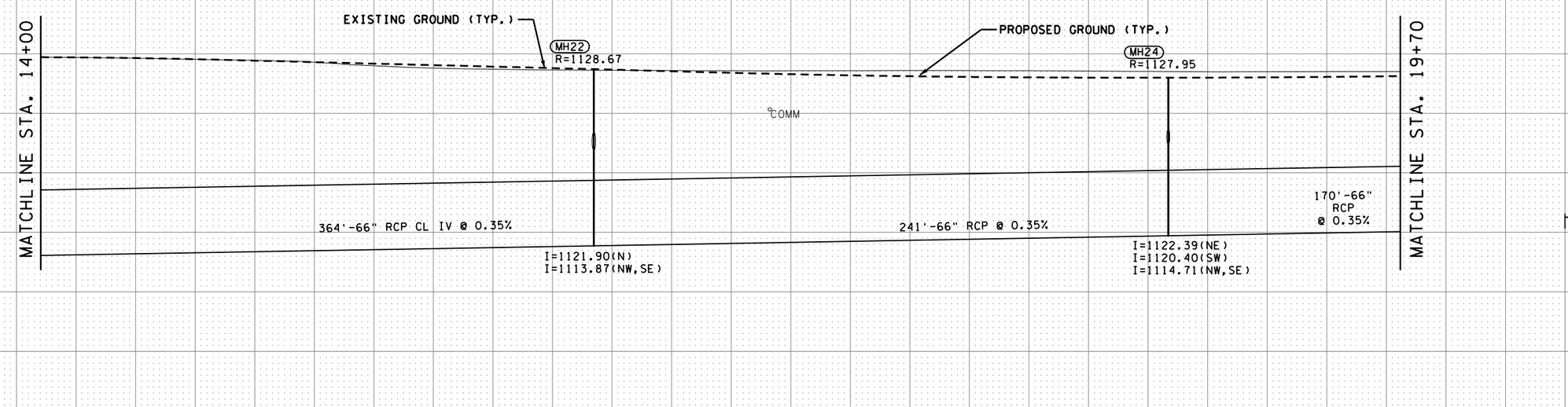
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SCALE 0 25 50 FEET

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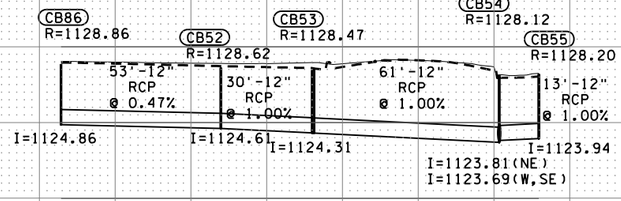
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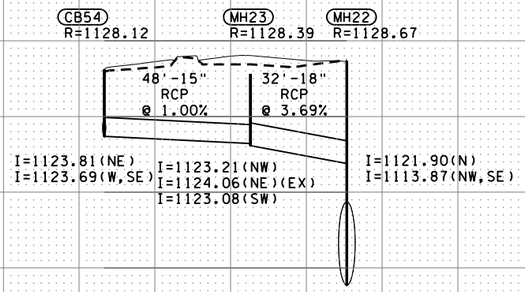
ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

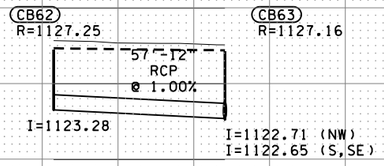
DESIGNED	DRAWN	CHECKED
JDZ	LLK	ACR

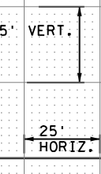
S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12
DRAINAGE PLAN & PROFILES

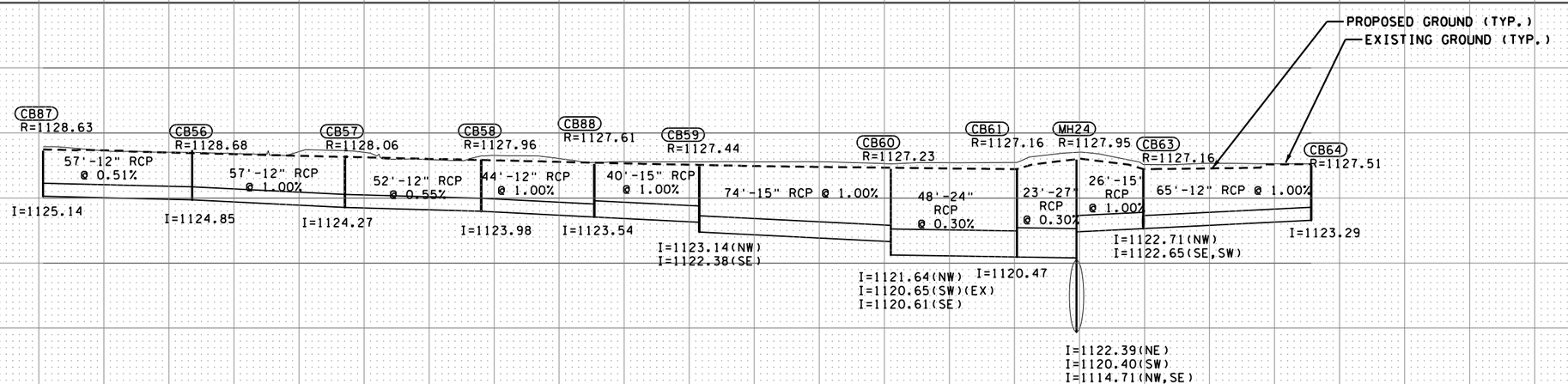
SHEET 146 OF 239











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VERTICAL SCALE 0 5 10 FEET
HORIZONTAL SCALE 0 25 50 FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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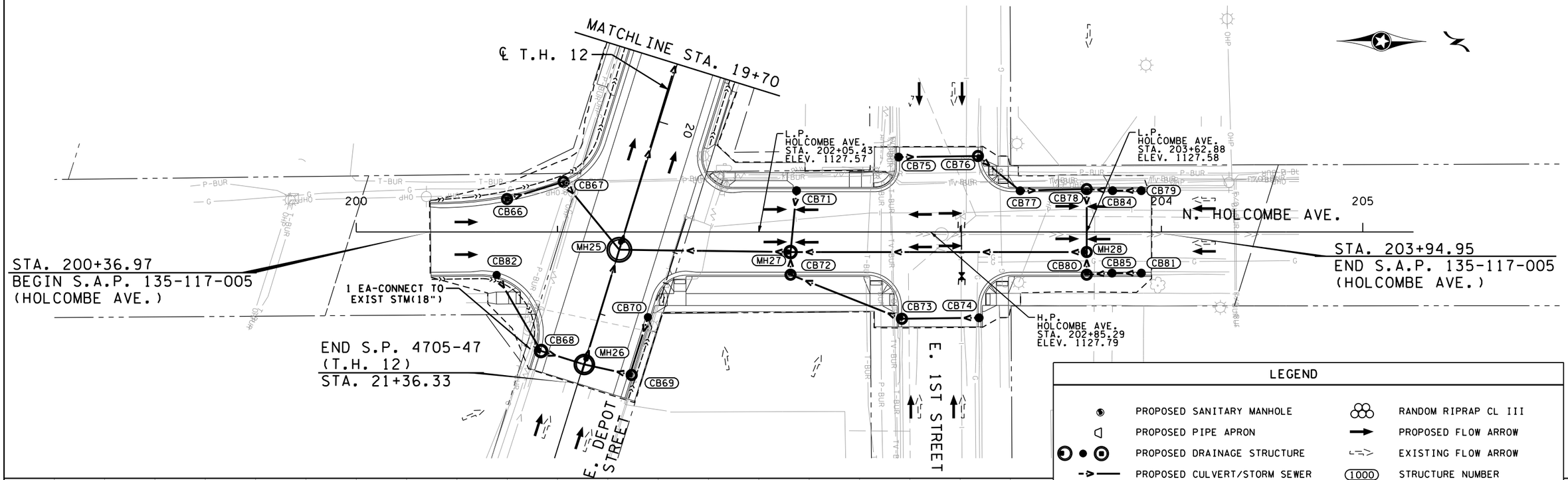
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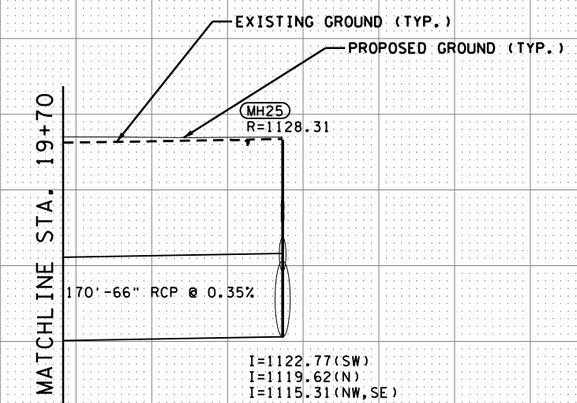
ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

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DRAWN	LLK
CHECKED	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE PLAN & PROFILES

SHEET 147 OF 239





LEGEND

PROPOSED SANITARY MANHOLE	RANDOM RIPRAP CL III
PROPOSED PIPE APRON	PROPOSED FLOW ARROW
PROPOSED DRAINAGE STRUCTURE	EXISTING FLOW ARROW
PROPOSED CULVERT/STORM SEWER	(1000) STRUCTURE NUMBER
EXISTING CULVERT/STORM SEWER	DELINEATED WETLAND
EXISTING DRAINAGE STRUCTURE	PROPOSED SANITARY SEWER
4" PERF TP PIPE	INPLACE SANITARY SEWER
PROPOSED WATERMAIN	
INPLACE WATERMAIN	

GENERAL NOTES:

A SEE INTERSECTION DETAILS FOR DRAINAGE PATTERNS IN INTERSECTIONS.

B SEE REMOVAL PLANS FOR TREE PROTECTION LOCATIONS. PROTECT TREES DURING STORM SEWER INSTALLATION (INCIDENTAL).

C AT ALL "CONNECT TO EXIST STM" LOCATIONS FIELD VERIFY ELEVATION AND LOCATION PRIOR TO CONSTRUCTION (INCIDENTAL).

D ALL 12" AND 15" PIPE IS CLASS V. ALL OTHER PIPE IS CLASS III UNLESS OTHERWISE NOTED IN THE STORM SEWER PROFILES.

E SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.

F 4" PERF TP LOCATIONS ARE APPROXIMATE. SEE TYPICAL SECTIONS AND DETAILS FOR EXACT LOCATIONS. CAP ENDS AT PROJECT LIMITS (INCIDENTAL).

G SEE CITY UTILITY SHEETS FOR SANITARY AND WATER MAIN PROFILES.

5' VERT.

25' HORIZ.

1150 1145 1140 1135 1130 1125 1120 1115 1110 1105

0 25 50
SCALE FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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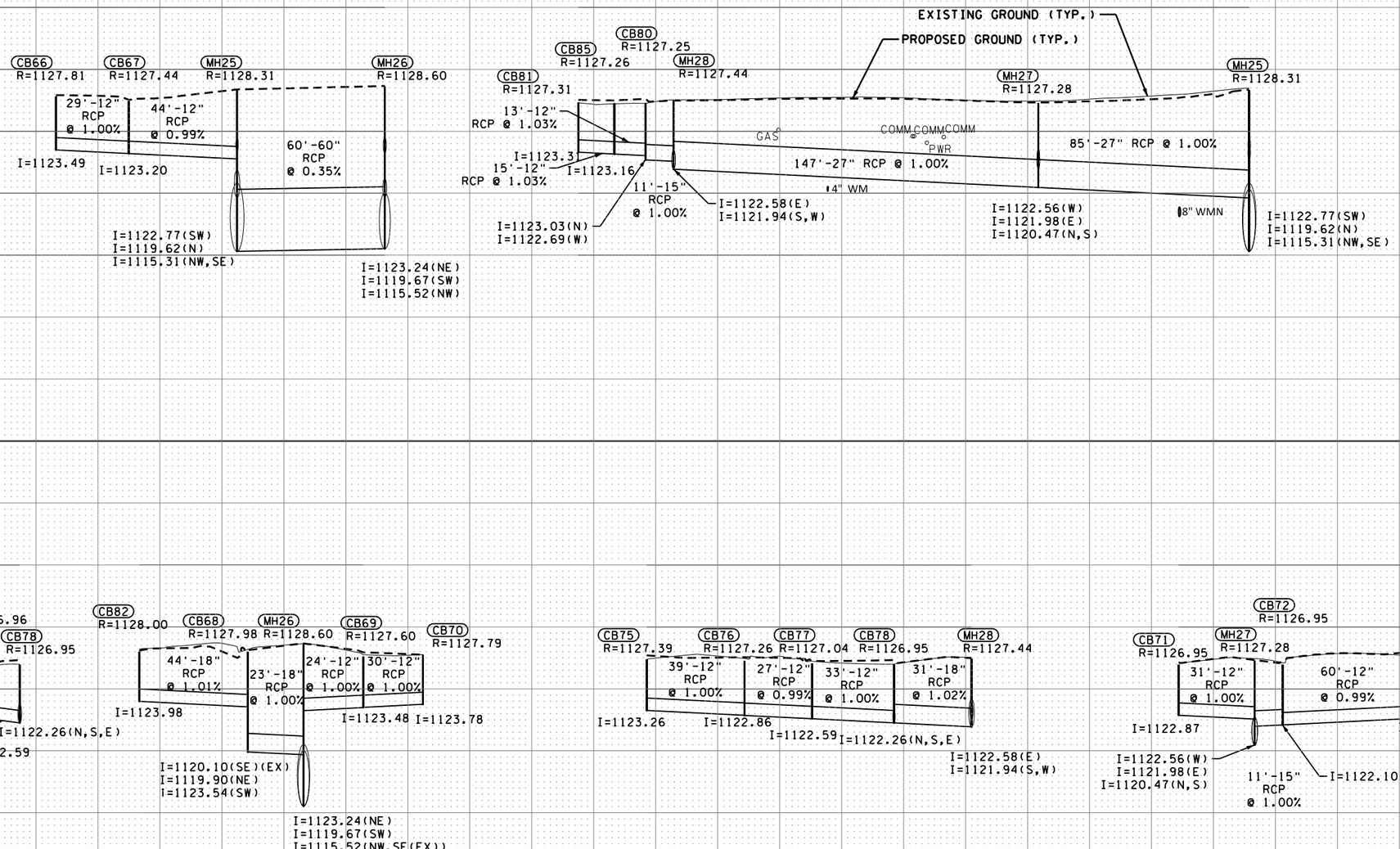
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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED	JDZ
DRAWN	LLK
CHECKED	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12
DRAINAGE PLAN & PROFILES

SHEET 148 OF 239



VERTICAL 0 5 10 SCALE FEET

HORIZONTAL 0 25 50 SCALE FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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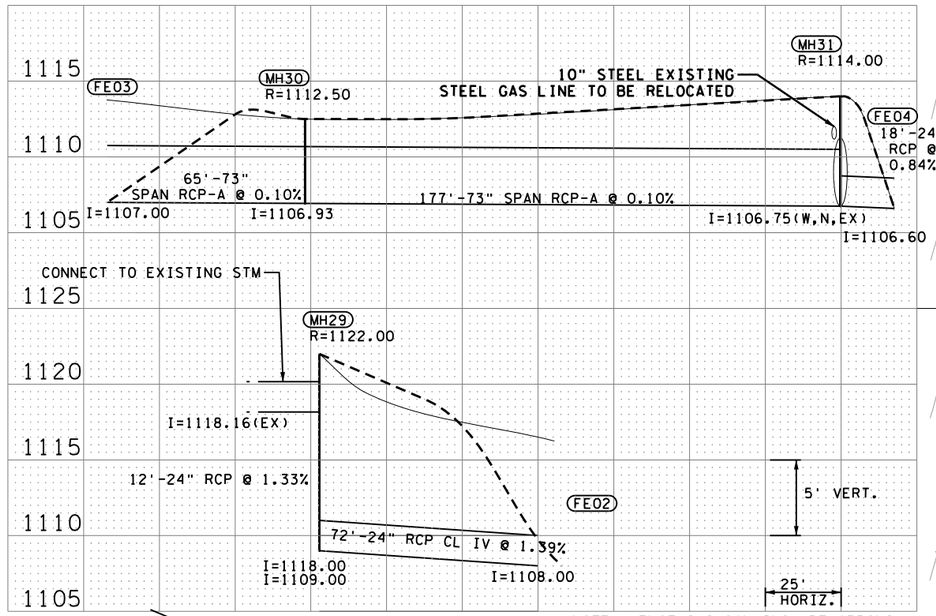
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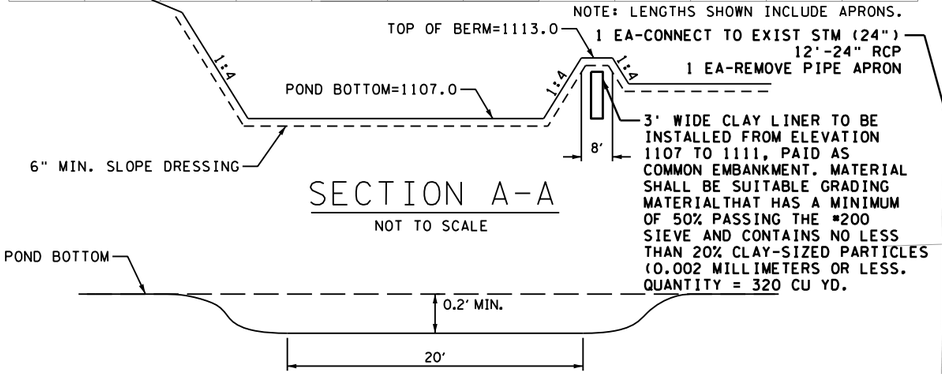
DESIGNED JDZ
DRAWN LLK
CHECKED ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE PLAN & PROFILES

SHEET 149 OF 239



NOTE: LENGTHS SHOWN INCLUDE APRONS.



SECTION A-A

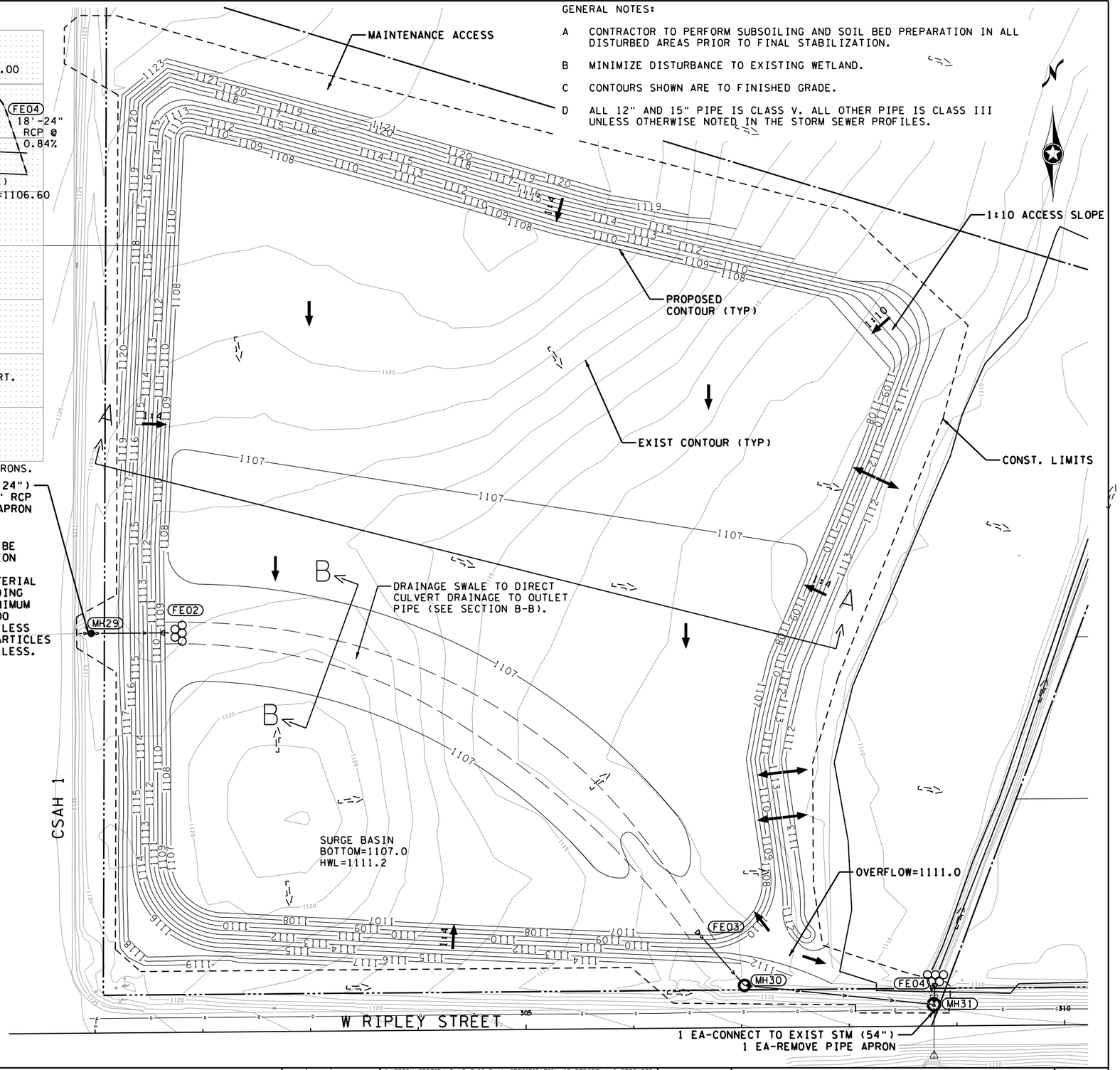
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SECTION B-B

NOT TO SCALE

LEGEND

	PROPOSED SANITARY MANHOLE		RANDOM RIPRAP CL III
	PROPOSED PIPE APRON		PROPOSED FLOW ARROW
	PROPOSED DRAINAGE STRUCTURE		EXISTING FLOW ARROW
	PROPOSED CULVERT/STORM SEWER	1000	STRUCTURE NUMBER
	EXISTING CULVERT/STORM SEWER		DELINEATED WETLAND
OM	EXISTING DRAINAGE STRUCTURE		PROPOSED SANITARY SEWER
	4" PERF TP PIPE		INPLACE SANITARY SEWER
	PROPOSED WATERMAIN		
	INPLACE WATERMAIN		



GENERAL NOTES:

A CONTRACTOR TO PERFORM SUBSOILING AND SOIL BED PREPARATION IN ALL DISTURBED AREAS PRIOR TO FINAL STABILIZATION.

B MINIMIZE DISTURBANCE TO EXISTING WETLAND.

C CONTOURS SHOWN ARE TO FINISHED GRADE.

D ALL 12" AND 15" PIPE IS CLASS V. ALL OTHER PIPE IS CLASS III UNLESS OTHERWISE NOTED IN THE STORM SEWER PROFILES.

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S.A.P. 135-010-009
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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

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DRAWN	LLK
CHECKED	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - POND
GRADING PLAN

SHEET 150 OF 239

DRAINAGE TABULATION

J

STRUCTURE NO.		CENTER OF CASTING LOCATION			CONSTRUCT DRAINAGE STRUCTURE DESIGN											2506				RC PIPE SEWER DESIGN 3006																		RC PIPE APRON						
					PAY HEIGHT															2503																		2501						
					2506																																							
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	G	H	F (3)	N	J	48-4020	60-4020	84-4020	96-4020	102-4020	120-4020	CASTING ASSEMBLY TYPE	TOP OF CASTING ELEV	OUTLET ELEV. (2)	INLET ELEV. (1)	12" CL V	15" CL V	18" CL III	24" CL III	24" CL IV	27" CL III	36" CL III	73" Pipe Arch	60" CL III	66" CL III	66" CL IV	72" CL IV	78" CL III	78" CL IV	84" CL III	102" Pipe Arch	24"	73" ARCH PIPE APRON	84"	2451 FINE AGG. BED. (CV)	2503 VIDEO TAPE PIPE SEWER	2554 GUIDE POST TYPE B	2503 CONNECT TO EX STORM SEWER	REMARKS
					LIN FT				EACH	LIN FT									LIN FT															EACH			CU YD	LIN FT	EACH	EACH	
S.P. 4704-89, S.A.P. 135-010-008 (4TH ST) (24% FEDERAL/6% STATE/70% CITY FUNDS)																																										
FE01	OUTLET	4TH	100+23.54	22.4' LT														1103.00																		1						(8)
MH01	FE01	4TH	100+34.50	7.7' LT											9.4	A - 7D	1112.37	1103.04	1103.00													13					12	13				
MH01		4TH	100+37.92	6.0' LT																																						(5)
MH02	MH01	4TH	102+18.08	4.8' LT											11.7	A - 7D	1114.92	1103.34	1103.04													183					174	183		1	(6)
MH02		4TH	102+20.95	2.4' LT																																						(5)
MH03	MH02	4TH	105+83.35	8.1' LT										17.0		A - 7D	1120.82	1103.93	1103.34											365								317	365			
MH03		4TH	105+85.53	5.8' LT																																						(5)
MH05	MH03	4TH	110+00.39	0.7' RT										18.4		A - 7D	1122.86	1104.58	1103.93											380			32					360	412			(7)
MH05		4TH	109+97.71	1.0' LT																																						(5)
MH07	MH05	4TH	113+39.04	0.0' LT					1							A - 7D	1126.50	1105.72	1104.58												341								296	341			
MH07		4TH	113+38.164	0.0' LT																																						(5)
MH08	MH07	4TH	117+00.01	0.0' LT					1							A - 7D	1129.53	1106.98	1105.72												361								313	361			
MH08		4TH	116+99.126	0.0' LT																																						(5)
MH09	MH08	4TH	120+21.63	0.2' RT											20.3	A - 7D	1128.30	1108.09	1106.98												318								277	318			
MH09		4TH	120+19.21	2.7' LT																																						(5)
MH10	MH09	TH12 NORTH	0+59.31 R 2	12.9' LT			13.0								7.0	A - 7D	1128.24	1108.32	1108.09												67								58	67			
MH10		TH12 NORTH	0+62.64 R 2	14.7' LT																																						(5)
CB01	MH02	4TH	102+18.03	11.0' LT		3.7										B - 9	1114.71	1111.10	1111.00	9																				1	9			
CB04	MH03	4TH	105+95.67	21.8' LT				4.1								B - 17	1120.81	1116.75	1116.56	19																				2	19			
CB05	CB03	4TH	106+19.78	15.0' RT	4.2											B - 9	1120.43	1116.30	1116.01	29																				3	29			
CB03	MH04	4TH	105+92.29	24.7' RT	4.5											B - 9	1120.38	1115.97	1115.87	10																				1	10			
CB02	MH04	4TH	105+60.08	24.6' RT		4.3										B - 9	1120.33	1116.14	1115.92	22																				3	22			
MH04	MH03	4TH	105+82.39	23.0' RT							8.5					A - 7D	1120.43	1112.02	1111.83						31														9	31		1	
MH04		4TH	105+82.37	24.8' RT																																						(5)
MH06	CB09	4TH	109+58.26	27.1' LT						5.6						A - 7D	1122.43	1116.87	1116.58			30																		5	30		1	
MH06		4TH	109+57.56	27.5' LT																																						(5)
CB09	MH05	4TH	109+87.00	18.5' LT						6.2						B - 9	1122.45	1116.33	1116.11			21																		3	21			
CB09		4TH	109+86.61	19.2' LT																																						(5)
CB06	CB07	4TH	109+30.02	30.2' RT	4.7											B - 9	1122.09	1117.50	1117.17	33																				4	33			
CB07	CB08	4TH	109+63.75	32.3' RT						5.0						B - 17	1122.10	1117.17	1116.90	28																				3	28			(4)
CB07		4TH	109+63.06	32.7' RT																																						(5)
CB08	MH05	4TH	109+87.00	17.5' RT						5.6						B - 9	1122.46	1116.90	1116.68	22																				3	22			
CB08		4TH	109+86.32	17.9' RT																																						(5)
CB10	CB11	4TH	116+69.39	22.6' RT				4.1								B - 17	1128.63	1124.57	1124.20	38																				4	38			
CB11	MH08	4TH	117+07.61	22.4' RT						5.1						B - 17	1129.26	1124.20	1123.30	23																				3	23			(4)
CB11		4TH	117+07.21	21.7' RT																																						(5)
CB12	CB13	TH12 NORTH	661+65.00	26.6' RT						4.8						B - 17	1127.66	1122.97	1122.71	26																				3	26		1	(4)
CB12		TH12 NORTH	661+65.02	27.4' RT																																						(5)
CB13	MH09	4TH	120+20.00	19.2' LT						5.1						B - 17	1127.76	1122.71	1122.00	19																				2	19			(4)
CB13		4TH	120+20.00	20.0' LT																																						(5)
CB14	MH09	4TH	120+18.50	18.7' RT						5.8						B - 17	1127.77	1122.07	1121.88		19																				3	19			(4)
CB14		4TH	120+17.94	18.1' RT																																						(5)
MH29	FE02	RIPLEY	301+00.21	370.9' LT						13.1						A - 7D	1122.00	1109.00	1108.00				12	66																16	78	1	1	
MH29		RIPLEY	300+99.42	370.9' LT																																						(5)
FE02	OUTLET	RIPLEY	301+71.62	370.7' LT														1108.00																	1						1	
FE04	OUTLET	RIPLEY	308+79.83	37.7' LT														1106.60																	1						1	
MH31	FE04	RIPLEY	308+79.08	23.7' LT											7.3	A - 7D	1114.00	1106.75	1106.60				12																2	12	1	1	
MH31		RIPLEY	308+78.74	19.9' LT																																						
MH30	MH31	RIPLEY	307+06.36	39.2' LT										5.7		A - 7D	1112.50	1106.93	1106.75								177													227	177	1		
MH30		RIPLEY	307+03.07	39.2' LT																																						(5)
FE03	MH30	RIPLEY	306+60.25	88.5' LT														1107.00	1106.93								57										1		74	57	1		
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					13.4	8.0	13.0	8.3	2	56.4	8.5			41.0	55.7	27				278	19	52	24	66		31	234					745	1088	196	32	2	1	1	2178	2763	6	6	

NOTES:
- THE CASTING (RIM, R) ELEVATION IS AT:
  - CENTER OF THE GRATE/COVER FOR AREA DRAINS/MANHOLES.
  -CENTER OF GRATE FOR CATCH BASIN GRATES.
- INVERT ELEVATIONS ARE GIVEN TO THE CENTER OF STRUCTURE IN TABLES AND PROFILES
- ELEVATIONS FOR RC PIPE CULVERTS ARE TO THE END OF THE APRON. SEE TABULATIONS FOR APRON TYPES.
- ALL PIPE LENGTHS SHOWN IN TABULATIONS DO NOT INCLUDE APRONS.
- STATION AND OFFSET ARE TO CENTER OF CASTING OR END OF APRON UNLESS OTHERWISE NOTED.

(1) INLET ELEVATION AT DOWNSTREAM STRUCTURE
(2) OUTLET ELEVATION AT STRUCTURE
(3) USE TYPE B CONE FOR TOP SECTION OF STRUCTURE.
(4) LID SHALL HAVE 30" OPENING (INCIDENTAL).
(5) ADDITIONAL STATION AND OFFSET GIVEN FOR CENTER OF 4020 OR F STRUCTURE.
(6) 66" TO 72" INCREASER (INCIDENTAL). MATCH INVERT ELEVATIONS.
(7) 2 EA- 102" ARCH BY 78" PRECAST TRANSITION (INCIDENTAL).
(8) SHALL BE TIED. BIELD DRILLING REQUIRED FOR PIPE TIES. SEE PIPE TIE - FLAT BAR STYLE SHEET 136A.

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S.A.P. 135-010-009
S.A.P. 135-117-005

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REV.	BY	DATE

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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED JDZ
DRAWN LLK
CHECKED ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE TABULATION

SHEET 151 OF 239

DRAINAGE TABULATION

J

STRUCTURE NO.		CENTER OF CASTING LOCATION			CONSTRUCT DRAINAGE STRUCTURE DESIGN										2506				RC PIPE SEWER DESIGN 3006															RC PIPE APRON					
					PAY HEIGHT														2503															2501					
					2506																																		
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	G	H	F (3)	N	J	48-4020	60-4020	84-4020	96-4020	102-4020	120-4020	CASTING ASSEMBLY TYPE	TOP OF CASTING ELEV	OUTLET ELEV. (2)	INLET ELEV. (1)	12" CL V	15" CL V	18" CL III	24" CL III	24" CL IV	27" CL III	36" CL III	73" Pipe Arch	60" CL III	66" CL III	66" CL IV	72" CL IV	78" CL III	78" CL IV	84" CL III	102" Pipe Arch	24"	73" ARCH PIPE APRON	84"	2451 FINE AGG. BED. (CV)	2503 VIDEO TAPE PIPE SEWER	2554 GUIDE POST TYPE B	2503 CONNECT TO EX STORM SEWER	REMARKS
					LIN FT				EACH	LIN FT									LIN FT															EACH			CU YD	LIN FT	EACH	EACH	
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)																																								
MH11	MH10	TH12 NORTH	4+96.44 R 2	11.1' LT					1							A - 7D	1130.52	1109.84	1108.32										434								343	434			
MH11		TH12 NORTH	4+85.442 R	11.1' LT																																				(5)
MH14	MH11	TH12 NORTH	6+50.52 R 2	12.0' LT					1							A - 7D	1130.49	1110.37	1109.84										154								122	154			
MH14		TH12 NORTH	6+49.639 R	12.0' LT																																				(5)
MH15	MH14	TH12 NORTH	8+94.80 R 2	12.0' LT					1							A - 7D	1131.54	1111.21	1110.37										244								193	244			
MH15		TH12 NORTH	8+93.915 R	12.0' LT																																				(5)
MH16	MH15	TH12 NORTH	10+79.22 R	10.9' LT					1							A - 7D	1130.83	1111.85	1111.21									184										132	184			(6)
MH16		TH12 NORTH	10+78.341 R	10.9' LT																																				(5)
MH17	MH16	TH12 NORTH	0+00.00 R 3	9.5' LT			9.9								7.0	A - 7D	1129.46	1112.60	1111.85									216										154	216			
MH17		TH12 NORTH	0+00.00 R 3	8.8' LT																																				(5)
CB89	CB21	TH12 NORTH	2+46.17 R 2	26.5' RT	4.4											B - 9	1128.88	1124.60	1124.40	20																		2	20			
CB18	MH10	TH12 NORTH	0+77.50 R 2	26.5' LT						5.6						B - 9	1127.96	1122.40	1122.21		19																	3	19			
CB18		TH12 NORTH	0+77.90 R 2	25.8' LT																																				(5)
CB19	CB18	TH12 NORTH	1+45.61 R 2	26.5' LT		4.5										B - 9	1127.96	1123.59	1122.90	68																		8	68			
CB16	CB17	TH12 NORTH	0+16.48 R 2	45.0' LT				3.9								B - 17	1127.68	1123.85	1123.66	37																		4	37			
CB17	CB18	TH12 NORTH	0+54.48 R 2	43.6' LT						4.1						B - 17	1127.72	1123.66	1123.36	30																		4	30			(4)
CB17		TH12 NORTH	0+53.92 R 2	44.1' LT																																				(5)
CB15	CB14	TH12 NORTH	0+80.03 R 2	26.5' RT						5.7						B - 9	1128.30	1122.66	1122.32		34																		5	34			
CB15		TH12 NORTH	0+80.59 R 2	25.9' RT																																				(5)
CB23	CB89	TH12 NORTH	2+70.91 R 2	26.5' RT		4.2										B - 9	1128.97	1124.85	1124.60	25																		3	25			
CB21	CB20	TH12 NORTH	2+25.00 R 2	26.5' RT						4.5						B - 17	1128.80	1124.40	1123.83	57																		7	57			(4)
CB21		TH12 NORTH	2+25.79 R 2	26.5' RT																																				(5)
CB20	CB15	TH12 NORTH	1+68.98 R 2	26.5' RT	5.0											B - 9	1128.73	1123.80	1122.91	88																		10	88			
CB24	CB25	TH12 NORTH	4+54.24 R 2	45.0' LT				4.4								B - 17	1129.46	1125.16	1124.72	44																		5	44			
CB25	MH11	TH12 NORTH	4+97.34 R 2	54.5' LT						5.3						B - 17	1129.89	1124.72	1124.28	44																		5	44			(4)
CB25		TH12 NORTH	4+97.17 R 2	55.3' LT																																				(5)
CB26	MH11	TH12 NORTH	5+32.89 R 2	26.5' LT				4.1								B - 17	1129.96	1125.96	1125.56	40																		5	40			
CB27	CB29	TH12 NORTH	5+60.00 R 2	26.5' RT				4.1								B - 17	1130.33	1126.33	1125.42	91																		11	91			
CB31	CB30	TH12 NORTH	6+99.14 R 2	47.3' LT						4.7						B - 9	1130.84	1126.20	1125.99			21																	3	21			
CB31		TH12 NORTH	6+99.14 R 2	47.3' LT																																				(5)
CB30	CB28	TH12 NORTH	6+96.63 R 2	26.5' LT						4.3						B - 9	1130.16	1125.99	1125.53			46																	7	46			
CB30		TH12 NORTH	6+96.63 R 2	26.5' LT																																				(5)
CB28	MH14	TH12 NORTH	6+50.52 R 2	26.5' LT						4.7						B - 17	1130.05	1125.40	1124.25			15																	2	15			(4)
CB28		TH12 NORTH	6+50.52 R 2	27.3' LT																																				(5)
CB32	CB83	TH12 NORTH	7+89.00 R 2	26.5' RT				3.6								B - 17	1130.61	1127.06	1125.76	130																		15	130			
CB83	CB29	TH12 NORTH	6+58.28 R 2	26.5' RT						4.6						B - 9	1130.30	1125.76	1125.67	9																		1	9			
CB83		TH12 NORTH	6+59.07 R 2	26.5' RT																																				(5)
CB29	MH14	TH12 NORTH	6+50.52 R 2	26.5' RT						4.7						B - 17	1130.05	1125.42	1124.25	39																		5	39			
CB29		TH12 NORTH	6+50.52 R 2	27.3' RT																																				(5)
CB34	CB33	TH12 NORTH	9+39.09 R 2	47.0' LT				3.9								B - 17	1130.49	1126.70	1126.27	43																		5	43			
CB33	MH15	TH12 NORTH	8+95.93 R 2	47.3' LT						4.5						B - 17	1130.69	1126.27	1125.30	36																		4	36			(4)
CB33		TH12 NORTH	8+95.90 R 2	48.1' LT																																				(5)
CB36	MH16	TH12 NORTH	10+88.00 R	26.5' RT				5.3								B - 17	1130.48	1125.30	1124.55	38																		5	38			
CB37	MH16	TH12 NORTH	11+37.38 R	26.5' LT	4.3											B - 9	1129.78	1125.60	1124.55		60																	8	60		1	
CB35	MH16	TH12 NORTH	10+44.00 R	26.5' LT						5.7						B - 17	1130.44	1124.85	1124.46	39																		5	39			(4)
CB35		TH12 NORTH	10+44.00 R	27.3' LT																																				(5)
CB39	MH17	TH12 NORTH	12+48.17 R	28.6' LT				4.0								B - 17	1129.09	1125.13	1124.62	51																		6	51			
CB38	MH32	TH12 NORTH	12+23.46 R	27.2' RT		4.2										B - 9	1129.39	1125.29	1124.63	66																		8	66			
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008					13.6	12.8	9.9	33.3	4	58.5					7.0	31				995	113	82						400	832								1090	2422		1	

NOTES:
- THE CASTING (RIM, R) ELEVATION IS AT:
  - CENTER OF THE GRATE/COVER FOR AREA DRAINS/MANHOLES.
  -CENTER OF GRATE FOR CATCH BASIN GRATES.
- INVERT ELEVATIONS ARE GIVEN TO THE CENTER OF STRUCTURE IN TABLES AND PROFILES
- ELEVATIONS FOR RC PIPE CULVERTS ARE TO THE END OF THE APRON. SEE TABULATIONS FOR APRON TYPES.
- ALL PIPE LENGTHS SHOWN IN TABULATIONS DO NOT INCLUDE APRONS.
- STATION AND OFFSET ARE TO CENTER OF CASTING OR END OF APRON UNLESS OTHERWISE NOTED.

(1) INLET ELEVATION AT DOWNSTREAM STRUCTURE
(2) OUTLET ELEVATION AT STRUCTURE
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(4) LID SHALL HAVE 30" OPENING (INCIDENTAL).
(5) ADDITIONAL STATION AND OFFSET GIVEN FOR CENTER OF 4020 OR F STRUCTURE.
(6) 66" TO 72" INCREASER (INCIDENTAL). MATCH INVERT ELEVATIONS.
(7) 2 EA- 102" ARCH BY 78" PRECAST TRANSITION (INCIDENTAL).
(8) SHALL BE TIED. BIELD DRILLING REQUIRED FOR PIPE TIES. SEE PIPE TIE - FLAT BAR STYLE SHEET 136A.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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www.bolton-menk.com

REV.	BY	DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED JDZ
DRAWN LLK
CHECKED ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE TABULATION

SHEET 152 OF 239

DRAINAGE TABULATION

J

STRUCTURE NO.		CENTER OF CASTING LOCATION			CONSTRUCT DRAINAGE STRUCTURE DESIGN										2506				RC PIPE SEWER DESIGN 3006																		RC PIPE APRON						REMARKS
					PAY HEIGHT														2503																		2501						
					2506																																						
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	G	H	F (3)	N	J	48-4020	60-4020	84-4020	96-4020	102-4020	120-4020	CASTING ASSEMBLY TYPE	TOP OF CASTING ELEV	OUTLET ELEV. (2)	INLET ELEV. (1)	12" CL V	15" CL V	18" CL III	24" CL III	24" CL IV	27" CL III	36" CL III	73" Pipe Arch	60" CL III	66" CL III	66" CL IV	72" CL IV	78" CL III	78" CL IV	84" CL III	102" Pipe Arch	24"	73" ARCH PIPE APRON	84"	2451 FINE AGG. BED. (CV)	2503 VIDEO TAPE PIPE SEWER	2554 GUIDE POST TYPE B	2503 CONNECT TO EX STORM SEWER	
					LIN FT				EACH	LIN FT									LIN FT																EACH			CU YD	LIN FT	EACH	EACH	
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)																																									
CB44	CB43	TH12 EAST	13+55.45	68.7' RT				3.6							B - 17	1127.69	1124.21	1123.89	32																			4	32			
CB42	MH17	TH12 EAST	13+41.54	23.5' RT						5.7					B - 9	1128.83	1123.22	1122.68		54																			8	54			
CB42		TH12 EAST	13+42.33	23.5' RT																																						(5)
CB43	CB42	TH12 EAST	13+24.03	61.0' RT						5.2					B - 9	1128.75	1123.64	1123.22		42																			6	42			
CB43		TH12 EAST	13+24.62	61.6' RT																																						(5)
CB41	MH32	TH22	68+17.20	26.5' LT				4.1							B - 17	1128.42	1124.42	1123.74	68																			8	68			
CB45	CB46	TH22	65+60.26	51.7' RT						4.3					B - 9	1129.58	1125.33	1125.04	29																			3	29			
CB45		TH22	65+61.05	51.7' RT																																						(5)
CB46	CB47	TH22	65+63.69	22.7' RT						4.0					B - 9	1129.00	1125.04	1124.00	104																			12	104			
CB46		TH22	65+64.48	22.7' RT																																						(5)
MH18	MH19	TH22	64+46.45	0.0' LT						5.7					A - 7D	1129.02	1123.39	1122.20		119																			16	119			
MH18		TH22	64+47.24	0.0' RT																																						(5)
MH19	EX	TH22	63+29.58	6.9' RT						6.3					A - 7D	1128.43	1122.20																									1	
MH19		TH22	63+28.79	6.9' RT																																						(5)
CB47	MH18	TH22	64+59.85	22.7' RT						4.5					B - 17	1128.43	1124.00	1123.73		27																			4	27			(4)
CB47		TH22	64+60.41	23.2' RT																																						(5)
CB48	MH18	TH22	64+50.00	21.0' LT		4.3									B - 9	1128.38	1124.20	1123.99	21																			2	21			
MH21	CB49	TH22	63+46.68	36.4' LT						6.2					A - 7D	1128.62	1122.50	1122.42			20																			3	20		1	
MH21		TH22	63+46.69	37.2' LT																																						(5)
CB49	CB50	TH22	63+55.49	21.0' LT								5.7			B - 17	1128.00	1122.42	1122.30				31																		6	31			(4)
CB49		TH22	63+57.78	21.0' LT																																						(5)
CB50	MH19	TH22	63+26.05	21.0' LT						5.9					B - 9	1128.10	1122.30	1122.20				27																		6	27			
CB50		TH22	63+26.61	20.4' LT																																						(5)
MH20	CB51	TH22	63+46.85	42.0' RT						7.0					A - 7D	1129.30	1122.36	1122.26		30																			4	30		2	
MH20		TH22	63+47.41	42.5' RT																																						(5)
CB51	MH19	TH22	63+26.84	21.1' RT						6.1					B - 17	1128.28	1122.26	1122.20			15																			2	15			(4)
CB51		TH22	63+26.25	21.6' RT																																						(5)
SUBTOTAL S.P. 4709-32, S.A.P. 135-010-009						4.3		7.6		61.0		5.7			15				254	272	34	59															85	619		4	

NOTES:
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(8) SHALL BE TIED. BIELD DRILLING REQUIRED FOR PIPE TIES. SEE PIPE TIE - FLAT BAR STYLE SHEET 136A.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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www.bolton-menk.com

REV.	BY	DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED JDZ
DRAWN LLK
CHECKED ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE TABULATION

SHEET 153 OF 239

DRAINAGE TABULATION

J

STRUCTURE NO.		CENTER OF CASTING LOCATION			CONSTRUCT DRAINAGE STRUCTURE DESIGN PAY HEIGHT 2506										2506				RC PIPE SEWER DESIGN 3006 2503													RC PIPE APRON 2501			2451	2503	2554	2503	
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	G	H	F (3)	N	J	48-4020	60-4020	84-4020	96-4020	102-4020	120-4020	CASTING ASSEMBLY TYPE	TOP OF CASTING ELEV	OUTLET ELEV. (2)	INLET ELEV. (1)	12" CL V	15" CL V	18" CL III	24" CL III	24" CL IV	27" CL III	36" CL III	73" Pipe Arch	60" CL III	66" CL III	66" CL IV	72" CL IV	78" CL III	78" CL IV	84" CL III	102" Pipe Arch	24"	73" ARCH PIPE APRON	84"	2451 FINE AGG. BED. (CV)	2503 VIDEO TAPE PIPE SEWER	2554 GUIDE POST TYPE B	2503 CONNECT TO EX STORM SEWER	REMARKS
					LIN FT				EACH	LIN FT										LIN FT															EACH			CU YD	LIN FT	EACH	EACH	
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)																																									
MH22	MH17	TH12 EAST	16+55.71	0.1' RT					1							A - 7D	1128.67	1113.87	1112.60										364										261	364			
MH22		TH12 EAST	16+54.831	0.1' RT																																					(5)
MH24	MH22	TH12 EAST	18+93.71	1.4' RT										13.3		A - 7D	1127.95	1114.71	1113.87									241										173	241			
MH24		TH12 EAST	18+96.88	1.4' RT										13.3																											(5)
MH25	MH24	TH12 EAST	20+62.96	0.5' RT											13.1	A - 7D	1128.31	1115.31	1114.71									170										122	170			
MH25		TH12 EAST	20+66.72	0.1' RT																																					(5)
MH26	MH25	TH12 EAST	21+23.45	0.3' LT									13.2			A - 7D	1128.60	1115.52	1115.31								60										38	60			
MH26		TH12 EAST	21+26.33	0.3' LT																																					(5)
CB86	CB52	TH12 EAST	14+67.38	24.5' LT		4.1										B - 9	1128.86	1124.86	1124.61	53																			6	53			
CB52	CB53	TH12 EAST	15+20.88	24.5' LT						4.1						B - 9	1128.62	1124.61	1124.31	30																			4	30			
CB52		TH12 EAST	15+20.09	24.5' LT																																					(5)
CB53	CB54	TH12 EAST	15+50.82	24.5' LT						4.2						B - 9	1128.47	1124.31	1123.69	61																			7	61			
CB53		TH12 EAST	15+50.13	24.1' LT																																					(5)
CB54	MH23	TH12 EAST	16+10.29	41.1' LT						4.5						B - 17	1128.12	1123.69	1123.21		48																		7	48			(4)
CB54		TH12 EAST	16+09.53	41.3' LT																																					(5)
CB55	CB54	TH12 EAST	16+18.22	51.0' LT		4.3										B - 9	1128.20	1123.94	1123.81	13																			2	13			
MH23	MH22	TH12 EAST	16+56.95	31.0' LT						5.4						A - 7D	1128.39	1123.08	1121.90			32																	5	32		1	
MH23		TH12 EAST	16+56.78	31.7' LT																																					(5)
CB87	CB56	TH12 EAST	15+23.23	23.5' RT		3.6										B - 9	1128.63	1125.14	1124.85	57																			7	57			
CB56	CB57	TH12 EAST	15+80.54	23.5' RT	3.9											B - 9	1128.68	1124.85	1124.27	58																			7	58			
CB57	CB58	TH12 EAST	16+38.47	23.5' RT	3.9											B - 9	1128.06	1124.27	1123.98	52																			6	52			
CB58	CB88	TH12 EAST	16+90.00	23.5' RT	4.1											B - 9	1127.96	1123.98	1123.54	44																			5	44			
CB88	CB59	TH12 EAST	17+33.61	23.5' RT	4.2											B - 9	1127.61	1123.54	1123.14		40																		6	40			
CB59	CB60	TH12 EAST	17+75.00	23.5' RT						5.1						B - 9	1127.44	1122.38	1121.64		74																		10	74			
CB59		TH12 EAST	17+74.20	23.5' RT																																					(5)
CB60	CB61	TH12 EAST	18+48.90	23.5' RT						6.7						B - 9	1127.23	1120.61	1120.47				48																10	48		1	
CB60		TH12 EAST	18+48.11	23.5' RT																																					(5)
CB61	MH24	TH12 EAST	18+96.58	23.5' RT							6.8					B - 17	1127.16	1120.47	1120.40						23														5	23			
CB61		TH12 EAST	18+96.58	24.8' RT																																					(5)
CB62	CB63	TH12 EAST	18+40.05	23.5' LT		4.1										B - 9	1127.25	1123.28	1122.71	57																			7	57			
CB63	MH24	TH12 EAST	18+96.58	23.5' LT						4.6						B - 17	1127.16	1122.65	1122.39		26																		4	26			(4)
CB63		TH12 EAST	18+96.58	24.3' LT																																					(5)
CB64	CB63	TH12 EAST	19+61.10	23.5' LT		4.3										B - 9	1127.51	1123.29	1122.65	65																			8	65			
CB66	CB67	HOLCOMBE	200+74.92	16.3' LT	4.3											B - 9	1127.67	1123.49	1123.20	29																			3	29			
CB67	MH25	HOLCOMBE	201+03.63	24.4' LT						4.3						B - 17	1127.44	1123.20	1122.77	44																			5	44			(4)
CB67		HOLCOMBE	201+03.02	24.9' LT																																					(5)
CB82	CB68	HOLCOMBE	200+69.74	21.4' RT		4.1										B - 9	1128.00	1123.98	1123.54	44																			5	44			
CB68	MH26	TH12 EAST	21+26.34	23.5' RT							8.2					B - 17	1127.98	1119.90	1119.67			23																		4	23		1	(4)
CB68		TH12 EAST	21+26.34	22.2' RT																																					(5)
CB70	CB69	TH12 EAST	20+94.50	23.5' LT		4.1										B - 9	1127.79	1123.78	1123.48	30																			4	30			
CB69	MH26	TH12 EAST	21+24.35	23.5' LT						4.2						B - 17	1127.60	1123.48	1123.24	24																			3	24			(4)
CB69		TH12 EAST	21+24.35	24.3' LT																																					(5)
SUBTOTAL S.P. 4705-47, S.A.P. 135-010-008					20.3	28.6			1	43.2	14.9		13.2	26.6	13.1	27				659	188	54	48		23			60	411	364									720	1808		3	

NOTES:
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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

BOLTON & MENK
12224 NICOLLET AVENUE
BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burnsville@bolton-menk.com
www.bolton-menk.com

REV.	BY	DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED JDZ
DRAWN LLK
CHECKED ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
DRAINAGE TABULATION

SHEET 154 OF 239

DRAINAGE TABULATION

J

STRUCTURE NO.		CENTER OF CASTING LOCATION			CONSTRUCT DRAINAGE STRUCTURE DESIGN										2506				RC PIPE SEWER DESIGN 3006																	RC PIPE APRON						REMARKS
					PAY HEIGHT														2503																	2501						
					2506																																				
FLOWS FROM	FLOWS TO	ALIGN.	STATION	OFFSET	G	H	F (3)	N	J	48-4020	60-4020	84-4020	96-4020	102-4020	120-4020	CASTING ASSEMBLY TYPE	TOP OF CASTING ELEV	OUTLET ELEV. (2)	INLET ELEV. (1)	12" CL V	15" CL V	18" CL III	24" CL III	24" CL IV	27" CL III	36" CL III	73" Pipe Arch	60" CL III	66" CL III	66" CL IV	72" CL IV	78" CL III	78" CL IV	84" CL III	102" Pipe Arch	24"	73" ARCH PIPE APRON	84"	2451 FINE AGG. BED. (CV)	2503 VIDEO TAPE PIPE SEWER	2554 GUIDE POST TYPE B	2503 CONNECT TO EX STORM SEWER	
					LIN FT				EACH	LIN FT									LIN FT																EACH			CU YD	LIN FT	EACH	EACH	
S.A.P. 135-117-005 (HOLCOMBE AVE) (100% CITY FUNDS)																																									
MH27	MH25	HOLCOMBE	202+14.45	10.0' RT							6.9					A - 7D	1127.28	1120.47	1119.62						85													19	85			
MH27		HOLCOMBE	202+15.74	10.0' RT																																						(5)
MH28	MH27	HOLCOMBE	203+62.09	10.0' RT						5.6						A - 7D	1127.44	1121.94	1120.47						147													33	147			
MH28		HOLCOMBE	203+62.88	10.0' RT																																						(5)
CB71	MH27	HOLCOMBE	202+18.73	20.5' LT				4.2								B - 17	1126.95	1122.87	1122.56	31																			4	31			
CB74	CB73	HOLCOMBE	203+09.40	42.7' RT				4.5								B - 17	1127.47	1123.07	1122.69	38																			5	38			
CB73	CB72	HOLCOMBE	202+70.40	42.8' RT						4.4						B - 17	1127.00	1122.69	1122.10	60																			7	60			(4)
CB73		HOLCOMBE	202+71.09	43.2' RT																																						(5)
CB72	MH27	HOLCOMBE	202+15.74	20.5' RT						4.9						B - 17	1126.95	1122.10	1121.98		11																			2	11			(4)
CB72		HOLCOMBE	202+15.74	21.3' RT																																						(5)
CB75	CB76	HOLCOMBE	202+69.40	37.2' LT				4.2								B - 17	1127.39	1123.26	1122.86	39																			5	39			
CB76	CB77	HOLCOMBE	203+09.40	37.2' LT						4.5						B - 17	1127.26	1122.86	1122.59	27																			3	27			(4)
CB76		HOLCOMBE	203+08.85	37.7' LT																																						(5)
CB77	CB78	HOLCOMBE	203+29.83	20.4' LT				4.5								B - 17	1127.04	1122.59	1122.26	33																			4	33			
CB78	MH28	HOLCOMBE	203+62.88	20.5' LT						4.8						B - 9	1126.95	1122.26	1121.94			31																	5	31			
CB78		HOLCOMBE	203+62.88	21.3' LT																																						(5)
CB84	CB78	HOLCOMBE	203+75.75	20.5' LT				4.5								B - 17	1126.96	1122.59	1122.26	13																			2	13			
CB79	CB84	HOLCOMBE	203+90.00	20.5' LT				4.1								B - 17	1127.01	1123.01	1122.59	14																			2	14			
CB81	CB85	HOLCOMBE	203+90.00	20.5' RT				4.1								B - 17	1127.31	1123.31	1123.16	15																			2	15			
CB85	CB80	HOLCOMBE	203+75.45	20.5' RT				4.2								B - 17	1127.26	1123.16	1123.03	13																			1	13			
CB80	MH28	HOLCOMBE	203+62.88	20.5' RT						4.6						B - 17	1127.25	1122.69	1122.58		11																			2	11			(4)
CB80		HOLCOMBE	203+62.87	21.3' RT																																						(5)
SUBTOTAL S.A.P. 135-117-005								34.2		28.8	6.9					15				283	23	31			232													93	569			
TOTALS					47.3	53.7	22.9	83.4	7.0	247.9	30.3	5.7	13.2	67.6	75.8	115				2469	615	253	131	66	255	31	234	60	411	764	832	745	1088	196	32	2	1	1	4166	8181	6	14	

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SUBSURFACE DRAIN

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ROADWAY	STATION TO STATION			ALIGNMENT	LOCATION	2502 4" PERF TP PIPE DRAIN LIN FT	2503 VIDEO TAPE PIPE SEWER LIN FT	OUTLETS INTO STRUCTURE	OUTLET ELEVATION
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL/20% STATE FUNDS)									
	0+14 R 2	TO	661+51	TH12_NORTH	LT	45	45	CAP	1124.90
	661+64	TO	661+51	TH12_NORTH	RT	13	13	CAP	1124.80
	0+57 R 2	TO	0+77 R 2	TH12_NORTH	LT	25	25	CB18	1124.90
	4+36 R 2	TO	0+77 R 2	TH12_NORTH	LT	361	361	CB18	1124.90
	4+36 R 2	TO	4+54 R 2	TH12_NORTH	LT	27	27	CB24	1126.40
	4+54 R 2	TO	4+54 R 2	TH12_NORTH	LT	22	22	CB24	1126.40
	0+12 R 2	TO	661+65	TH12_NORTH	RT	27	27	CB12	1124.60
	0+56 R 2	TO	0+81 R 2	TH12_NORTH	RT	32	32	CB15	1124.90
	2+23 R 2	TO	0+81 R 2	TH12_NORTH	RT	143	143	CB15	1125.80
	4+51 R 2	TO	2+25 R 2	TH12_NORTH	RT	230	230	CB21	1125.80
	4+51 R 2	TO	4+51 R 2	TH12_NORTH	RT	47	47	CAP	1126.90
	5+18 R 2	TO	5+04 R 2	TH12_NORTH	RT	82	82	CAP	1126.90
	4+97 R 2	TO	4+97R 2	TH12_NORTH	LT	6	6	CB25	1126.80
	5+18 R 2	TO	4+97 R 2	TH12_NORTH	LT	37	37	CB25	1126.80
	5+18 R 2	TO	6+51 R 2	TH12_NORTH	LT	133	133	CB28	1127.06
	6+94 R 2	TO	6+51 R 2	TH12_NORTH	LT	45	45	CB28	1127.06
	8+92 R 2	TO	6+97 R 2	TH12_NORTH	LT	224	224	CB30	1127.16
	5+18 R 2	TO	5+60 R 2	TH12_NORTH	RT	44	44	CB27	1127.37
	5+60 R 2	TO	6+50 R 2	TH12_NORTH	RT	89	89	CB29	1127.29
	7+86 R 2	TO	6+50 R 2	TH12_NORTH	RT	136	136	CB29	1127.29
	8+94 R 2	TO	7+89 R 2	TH12_NORTH	RT	119	119	CB32	1127.61
	9+39 R 2	TO	9+39 R 2	TH12_NORTH	LT	14	14	2028	1127.06
	9+53 R 2	TO	9+39 R 2	TH12_NORTH	LT	27	27	2028	1127.06
	9+53 R 2	TO	10+44 R 2	TH12_NORTH	LT	91	91	CB35	1127.44
	10+68 R 2	TO	10+44 R 2	TH12_NORTH	LT	25	25	CB35	1127.44
	10+68 R 2	TO	11+37 R 2	TH12_NORTH	LT	71	71	CB37	1126.78
	11+37 R 2	TO	12+48 R 2	TH12_NORTH	LT	108	108	CB39	1126.19
	9+42 R 2	TO	10+88 R 2	TH12_NORTH	LT	162	162	CB36	1127.48
	11+14 R 2	TO	10+88 R 2	TH12_NORTH	LT	28	28	CB36	1127.48
	11+14 R 2	TO	12+23 R 2	TH12_NORTH	LT	109	109	CB38	1126.39
	12+38 R 2	TO	12+23 R 2	TH12_NORTH	LT	46	46	CB38	1126.39
SUBTOTAL S.P. 4704-89, S.A.P. 135-010-008						**2568**	**2568**		
S.P. 4705-47, S.A.P. 135-010-008 (T.H. 12) (80% FEDERAL/20% STATE FUNDS)									
T.H. 12	14+18	TO	12+96	TH12_EAST	LT	127	127	CB39	1126.19
	14+18	TO	15+21	TH12_EAST	LT	104	104	CB52	1125.62
	15+21	TO	16+10	TH12_EAST	LT	91	91	CB54	1125.12
	16+17	TO	16+10	TH12_EAST	LT	17	17	CB54	1125.12
	17+14	TO	18+97	TH12_EAST	LT	186	186	CB63	1124.16
	20+04	TO	18+97	TH12_EAST	LT	108	108	CB63	1124.16
	14+17	TO	16+90	TH12_EAST	RT	276	276	CB58	1124.82
	16+90	TO	18+97	TH12_EAST	RT	204	204	CB61	1124.16
	20+71	TO	18+97	TH12_EAST	RT	215	215	CB61	1124.16
	21+36	TO	20+95	TH12_EAST	LT	42	42	CB70	1124.79
	21+09	TO	21+25	TH12_EAST	RT	75	75	CB68	1124.98
SUBTOTAL S.P. 4705-47, S.A.P. 135-010-008						**1445**	**1445**		
S.P. 4709-32, S.A.P. 135-010-009 (T.H. 22) (80% FEDERAL/20% STATE FUNDS)									
T.H. 22	68+84	TO	68+39	TH22	LT	73	73	CB40	1125.51
	67+21	TO	68+39	TH22	LT	118	118	CB40	1125.51
	68+14	TO	67+97	TH22	RT	75	75	CB44	1125.18
	67+06	TO	67+97	TH22	RT	93	93	CB44	1125.18
	66+49	TO	65+64	TH22	RT	85	85	CB46	1126.08
	65+64	TO	64+60	TH22	RT	103	103	CB47	1125.43
	64+12	TO	64+60	TH22	RT	89	89	CB47	1125.43
	63+65	TO	63+27	TH22	RT	77	77	CB51	1125.28
	66+67	TO	64+50	TH22	LT	219	219	CB48	1125.38
	64+50	TO	63+58	TH22	LT	94	94	CB49	1125.04
SUBTOTAL S.P. 4709-32, S.A.P. 135-010-009						**1026**	**1026**		
TOTALS						**5039**	**5039**		

CASTING ASSEMBLY (STORM)

L

ASSEMBLY NO.	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	2506 QUANTITY (EACH)
B - 9	805	816		41
A - 7D	700-7	716		29
B - 17	805	816	825	45
TOTALS				**115**

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION/LOCATION

SP 4704-89 IS LOCATED ON TH 12,22 FROM HOLCOMBE AVENUE THROUGH WEST 4TH STREET IN THE CITY OF LITCHFIELD.

THE PLANNED SCOPE OF THE PROJECT INCLUDES:

COMPLETE RECONSTRUCTION OF TH 12 AND 22 WITHIN THE PROJECT LIMITS, INCLUDING WEST 4TH STREET. INCLUDES PRIVATE AND PUBLIC UTILITY RELOCATES, NEW STORM SEWER OUTFALL TO JEWITTS CREEK ON 4TH STREET. ADA, LIGHTING, STRIPING, AND SIGNAGE IMPROVEMENTS ARE ALSO INCLUDED. A DRY SURGE BASIN IS ALSO BEING CONSTRUCTED OFF SITE TO MANAGE PEAK RUNOFF RATES.

SPECIAL AND IMPAIRED WATERS

THESE SPECIAL AND IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE. DUE TO THE PROXIMITY OF THESE SPECIAL AND IMPAIRED WATERS THE BMPS DESCRIBED IN APPENDIX A OF THE NPDES PERMIT WILL APPLY.

-JEWITTS CREEK: IMPAIRED FOR DISSOLVED OXYGEN, MACROINVERTEBRATE BIOASSESSMENTS, CHLORIDE, ESCHERICHIA COLI, FISH BIOASSESSMENTS.

ENVIRONMENTALLY SENSITIVE AREAS

IN ADDITION TO THE LIST OF SPECIAL AND IMPAIRED WATERS THE CONTRACTOR SHALL BE AWARE OF THESE ADDITIONAL ENVIRONMENTALLY SENSITIVE AREAS:

-DELINEATED WETLANDS WHERE SHOWN IN THE DRAINAGE AND TURF ESTABLISHMENT PLANS.

LONG TERM MAINTENANCE AND OPERATION

MNDOT HAS ENTERED INTO A COOPERATIVE AGREEMENT WITH LITCHFIELD THAT IDENTIFIES THE AGENCY THAT IS RESPONSIBLE FOR ONGOING MAINTENANCE. SEE AGREEMENT NUMBER 1031692, ON FILE WITH MNDOT, FOR MORE INFORMATION.

SWPPP TRAINING

THIS SWPPP WAS PREPARED BY BOLTON & MENK PERSONNEL THAT ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE ON FILE WITH MNDOT AND ARE AVAILABLE UPON REQUEST. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A CERTIFIED EROSION CONTROL SUPERVISOR THAT IS RESPONSIBLE FOR OVERSEEING THE IMPLEMENTATION OF THE SWPPP. THE CONTRACTOR MUST PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING AND WILL NOT BE ALLOWED TO COMMENCE WORK UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

EROSION CONTROL SUPERVISOR

IN ACCORDANCE WITH SPEC. 2573.3 A1 THE CONTRACTOR WILL PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES. THE EROSION CONTROL SUPERVISOR IS INCIDENTAL.

THE EROSION CONTROL SUPERVISOR WILL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA.

THE EROSION CONTROL SUPERVISOR IS RESPONSIBLE FOR COMPLYING WITH ALL THE INSPECTION AND MAINTENANCE REQUIREMENTS STATED IN THE NPDES PERMIT PART IV. F. INSPECTIONS OF THE ENTIRE CONSTRUCTION SITE WILL OCCUR A MINIMUM OF ONCE EVERY SEVEN DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE EROSION CONTROL SUPERVISOR WILL THOROUGHLY INSPECT ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS OF EACH BMP. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP. INSPECTION REPORTS MUST BE SUBMITTED TO THE PROJECT ENGINEER IN A FORMAT THAT MEETS OR EXCEEDS THE PROJECT ENGINEERS EXPECTATIONS. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:

A. DATE AND TIME OF INSPECTIONS;
B. NAME OF PERSONS CONDUCTING INSPECTIONS;
C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
D. CORRECTIVE ACTIONS TAKEN, INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES;
E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS; AND
F. DOCUMENTS AND CHANGES MADE TO THE SWPPP.

ENVIRONMENTAL REVIEW

THERE ARE NO STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET OR THE SPECIAL PROVISIONS.

THIS PROJECT IS NOT LOCATED IN A WELL HEAD PROTECTION AREA.

DEWATERING/BASIN DRAINING:
NO TEMPORARY DEWATERING WELLS ARE ANTICIPATED FOR THIS PROJECT.
IF A PERMIT FOR THE TEMPORARY APPROPRIATION OF WATERS OF THE STATE IS NEEDED THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THIS PERMIT. ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. THE CONTRACTOR IS REQUIRED TO SUBMIT SITE PLANS TO A MN/DOT ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK, ACCORDING TO SPEC. 1717.2D.

ALL CONSTRUCTION DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER.

PROJECT CONTACTS:

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2018 EDITION), OR ON FILE WITH MNDOT. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET.

THE MNDOT RESIDENT ENGINEER IS:
PAUL RASMUSSEN
MNDOT DISTRICT 8
2505 TRANSPORTATION ROAD
WILLMAR MN 56201
320-214-6320

THE MNDOT PROJECT MANAGER IS:
ALAN SETRUM
WILLMAR REGIONAL ENGINEER SPECIALIST
MNDOT DISTRICT 8
2505 TRANSPORTATION ROAD
WILLMAR MN 56201
320-214-6321

THE MN/DOT MAINTENANCE CONTACT IS:
TIM McCOY
WILLMAR REGION AREA SUPERVISOR
MNDOT DISTRICT 8
2505 TRANSPORTATION ROAD
WILLMAR MN 56201
320-214-6336

THE MPCA CONTACT IS:
KRISTI KALK
(207) 344-5261

THE DNR CONTACT IS:
PETER LEETE
(651) 366-3634

MINNESOTA POLLUTION CONTROL AGENCY
520 LAFAYETTE ROAD
SAINT PAUL, MN 55155-4194
24 HOUR EMERGENCY *800-422-0798

LIST REQUIRED ENVIRONMENTAL PERMITS REQUIRED.
MPCA CONSTRUCTION STORMWATER PERMIT, DNR WORK IN PUBLIC WATERS PERMIT.

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, MNDOT SPEC BOOK (2005 EDITION), OR ON FILE WITH MNDOT. THE NOTES AND TABLE BELOW ARE INTENDED TO BE A QUICK REFERENCE FOR THE CONTRACTOR AND PROJECT ENGINEER TO USE IN THE FIELD. THERE MAY BE ADDITIONAL REQUIRED SWPPP ELEMENTS INCLUDED ON THE PROJECT THAT ARE NOT LISTED ON THIS SHEET.

SWPPP CROSS-REFERENCE TABLE

DESCRIPTION	TITLE	LOCATION
TEMPORARY AND PERMANENT EROSION PREVENTION AND SEDIMENT CONTROL BMP'S	TEMPORARY/PERMANENT EROSION CONTROL	SHEETS 159-166
EXISTING AND FINAL GRADES	PLAN AND PROFILE	SHEETS 87-107
DIRECTION OF ALL PRE AND POST CONSTRUCTION STORM WATER RUNOFF	DRAINAGE AND TURF PLANS	SHEETS 135-150, 159-166
SUMMARY OF PERVIOUS AND IMPERVIOUS SURFACE	SWPPP	SHEETS 157, 158
SOIL MAP	SOILS MAP	FIELD OFFICE
AMENDING RECORD	SWPPP AMENDING RECORD	FIELD OFFICE
AREAS NOT TO BE DISTURBED	N/A	
PHASED CONSTRUCTION	N/A	
SURFACE WATERS AND EXISTING WETLANDS WHICH WILL RECEIVE STORM WATER RUNOFF	DRAINAGE AND TURF PLANS	SHEETS 135-150, 159-166
TEMPORARY/FINAL STABILIZATION	TEMPORARY/PERMANENT EROSION CONTROL	SHEETS 159-166
TEMPORARY SEDIMENT BASINS	N/A	
WET SEDIMENT BASINS	N/A	
INFILTRATION/FILTRATION	N/A	
REGIONAL POND	N/A	
COMBINATION OF PRACTICES	N/A	
ALTERNATIVE METHODS	N/A	
DEWATERING AND BASIN DRAINING	N/A	
POLLUTION PREVENTION MANAGEMENT MEASURES	SPECIAL PROVISIONS	S SECTION
FINAL STABILIZATION	SPECIAL PROVISIONS	S SECTION

SOIL TYPES

DICKMAN SANDY LOAM
WADENA LOAM
MAYER-BISCAY DEPRESSIONAL COMPLEX
MEDO MUCK
KANARANZI LOAM

LAND FEATURE CHANGES	
	ACRES
TOTAL DISTURBED AREA	21.1
TOTAL IMPERVIOUS SURFACE	7.3
ESTIMATED IMPERVIOUS SURFACE (POST CONSTRUCTION)	7.2
TOTAL PROPOSED NEW IMPERVIOUS SURFACE (POST CONSTRUCTION)	-0.1

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S.A.P. 135-117-005

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BOLTON & MENK
12224 NICOLLET AVENUE
BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burnsville@bolton-menk.com
www.bolton-menk.com

REV.	BY	DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
ANTHONY C. ROTCHADL
LIC. NO. 12345 DATE 12-27-2018

DESIGNED JDZ
DRAWN LLK
CHECKED ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
SWPPP

SHEET 157 OF 239

STORM WATER POLLUTION PREVENTION PLAN NARRATIVE
CONSTRUCTION ACTIVITY REQUIREMENTS

1. THE CONTRACTOR SHALL FOLLOW THE CONSTRUCTION REQUIREMENTS IN SPECIFICATION 2573.3 FOR STORMWATER MANAGEMENT, BMP INSTALLATION, MAINTENANCE, AND REMOVAL PROCEDURES WHICH INCLUDE STABILIZING THE AREAS WHERE SEDIMENT REMOVAL IS PLACED.

2. THE CONTRACTOR MUST USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS, AND ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS.

3. ANY SUBSURFACE DRAINAGE TILES ENCOUNTERED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHOULD BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

4. IT IS THE DESIGNER'S INTENT THAT THE CONTRACTOR BUILD PONDS AND PLACE PERMANENT EROSION CONTROL BEFORE PUTTING THEM IN ACTIVE SERVICE TO THE MAXIMUM EXTENT PRACTICABLE. ALL PONDS FOR THE PROJECT WILL BE SUBJECT TO THE SITE PLAN REQUIREMENT AREA EROSION CONTROL SCHEDULE AS PER 1717.

5. DITCH GRADES MUST BE PROTECTED. ANY FINAL GRADED DITCH BOTTOMS DISTURBED DURING OPERATIONS MUST BE RESTORED TO PRE- EXISTING CONDITIONS WITHIN 3 DAYS.

6. THE CONTRACTOR MAY NOT DRIVE ANY EQUIPMENT ON FINISHED POND BOTTOMS OR POND CORNERS. IF DISTURBED, POND BOTTOM AND POND CORNERS MUST BE RESTORED TO PRE- EXISTING CONDITIONS WITHIN 24 HOURS.

7. ANY RUTS OR DAMAGED TURF THAT COULD CREATE SEDIMENT DISCHARGE TO POND BOTTOMS MUST BE REPAIRED WITHIN 24 HOURS.

8. TILLING FOR BEDS OR TREE HOLES ON SLOPES OF 3 TO 1 OR GREATER MUST BE PLANTED AND MULCHED WITH WOODCHIP WITHIN 7 DAYS OR STRAW MULCHED UNTIL PLANTING OPERATIONS CAN BE COMPLETED.

9. ANY POND CORNERS OPENED DUE TO TILLING FOR SHRUB BEDS OR TREE HOLES MUST BE PLANTED AND MULCHED WITH WOODCHIP WITHIN 24 HOURS OR STRAW MULCHED UNTIL PLANTING OPERATIONS CAN BE COMPLETED.

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ANTHONY C. ROTCHADL
LIC. NO. 12345 DATE 12-27-2018

DESIGNED	JDZ
DRAWN	LLK
CHECKED	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
SWPPP

LEGEND

- SEED MIX 25-151 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 35-241 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- SEED MIX 33-261 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- RANDOM RIPRAP CL IV
- SEED MIX 25-151 FERTILIZER TYPE 3 EROSION CONTROL BLANKET CATEGORY 0
- SEED MIX 35-241 FERTILIZER TYPE 3 TURF REINFORCEMENT MAT CATEGORY 1 EROSION CONTROL BLANKET CATEGORY 3N
- STORM DRAIN INLET PROTECTION
- MS SILT FENCE, TYPE MS
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- RANDOM RIPRAP CL III
- DELINEATED WETLAND
- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEED MIX 33-261 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N

SITE MANAGEMENT PLAN REQUIRED FOR ALL WORK WITHIN 100' OF JEWITTS CREEK

TEMP SED BASIN LOCATION OR OTHER EROSION BMPs AS NEEDED TO MEET PERMIT REQUIREMENTS AND LIMIT SEDIMENT DISCHARGE (INCLUDE WITH SITE MANAGEMENT PLAN).

PROTECT DURING CONSTRUCTION (INCIDENTAL)

① 100 105

℄ W. 4TH STREET

JEWITTS CREEK

N. DONNELLY AVE.

N. AUSTIN AVE.

MATCHLINE STA. 106+25

STA. 100+16.38
BEGIN S.P. 4704-89 (4TH STREET)
BEGIN S.A.P. 135-010-008 (4TH STREET)

GENERAL NOTES:

1. SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.

SPECIFIC NOTES:

① CL IV RANDOM RIPRAP SHALL BE PLACED AT A 2.0' MINIMUM DEPTH ALONG STREAM BOTTOM AND CREEK BANKS. MAINTAIN EXISTING CREEK ELEVATIONS. EXCAVATION REQUIRED TO PLACE RIPRAP IS INCIDENTAL.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

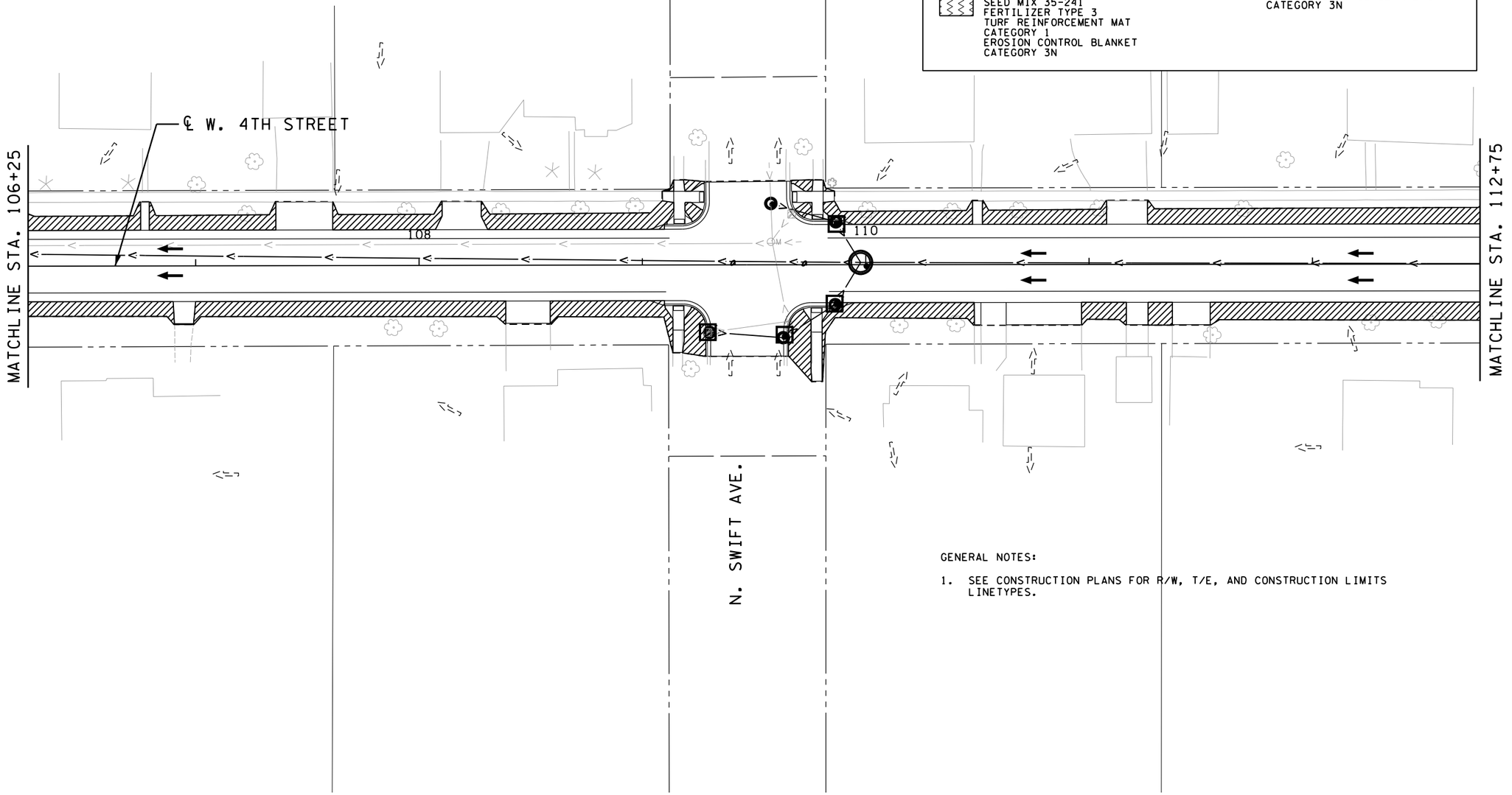
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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
TURF ESTAB. & EROSION CONTROL PLAN

SHEET 159 OF 239

LEGEND

- SEED MIX 25-151 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 35-241 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- SEED MIX 33-261 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- RANDOM RIPRAP CL IV
- SEED MIX 25-151 FERTILIZER TYPE 3 EROSION CONTROL BLANKET CATEGORY 0
- SEED MIX 35-241 FERTILIZER TYPE 3 TURF REINFORCEMENT MAT CATEGORY 1 EROSION CONTROL BLANKET CATEGORY 3N
- STORM DRAIN INLET PROTECTION
- MS — SILT FENCE, TYPE MS
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- RANDOM RIPRAP CL III
- DELINEATED WETLAND
- CP — CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEED MIX 33-261 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N



GENERAL NOTES:

1. SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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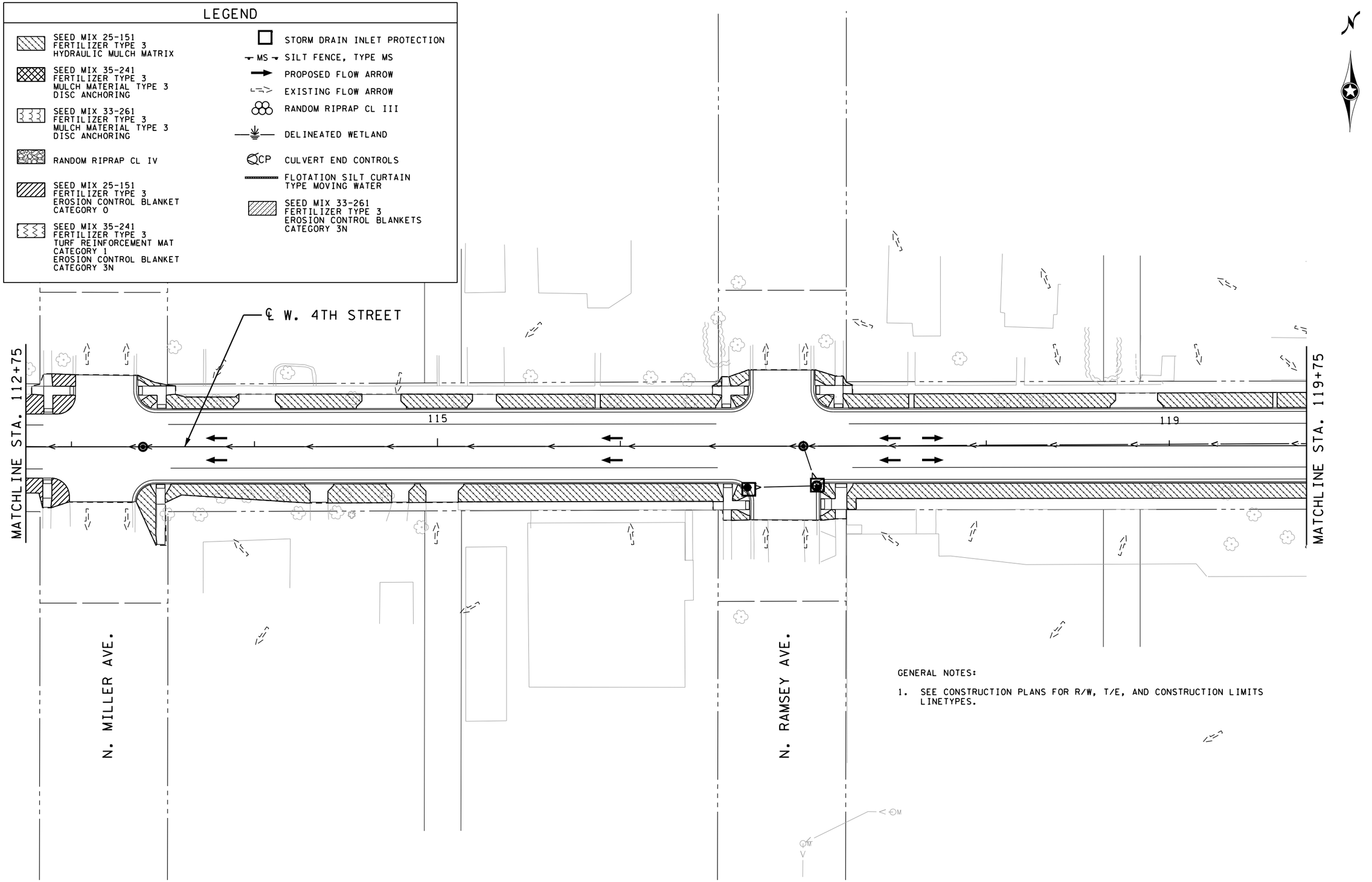
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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - 4TH STREET
TURF ESTAB. & EROSION CONTROL PLAN

SHEET 160 OF 239

LEGEND

- SEED MIX 25-151
  FERTILIZER TYPE 3
  HYDRAULIC MULCH MATRIX
- SEED MIX 35-241
  FERTILIZER TYPE 3
  MULCH MATERIAL TYPE 3
  DISC ANCHORING
- SEED MIX 33-261
  FERTILIZER TYPE 3
  MULCH MATERIAL TYPE 3
  DISC ANCHORING
- RANDOM RIPRAP CL IV
- SEED MIX 25-151
  FERTILIZER TYPE 3
  EROSION CONTROL BLANKET
  CATEGORY 0
- SEED MIX 35-241
  FERTILIZER TYPE 3
  TURF REINFORCEMENT MAT
  CATEGORY 1
  EROSION CONTROL BLANKET
  CATEGORY 3N
- STORM DRAIN INLET PROTECTION
- MS SILT FENCE, TYPE MS
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- RANDOM RIPRAP CL III
- DELINEATED WETLAND
- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN
  TYPE MOVING WATER
- SEED MIX 33-261
  FERTILIZER TYPE 3
  EROSION CONTROL BLANKETS
  CATEGORY 3N



GENERAL NOTES:

1. SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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T.H. 12/22 RECONSTRUCTION - 4TH STREET
TURF ESTAB. & EROSION CONTROL PLAN

SHEET 161 OF 239

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℄ W. 4TH STREET

BEGIN S.P. 4704-89 (T.H. 12/22)
BEGIN S.A.P. 135-010-008 (SIBLEY AVE.)
STA. 661+51.99

END S.P. 4704-89 (4TH STREET)
END S.A.P. 135-010-008 (4TH STREET)
STA. 121+12.66

℄ T.H. 12/22

3RD STREET

660

0

122

120

5

MATCHLINE STA. 119+75

MATCHLINE STA. 5+60

GENERAL NOTES:

1. SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.

LEGEND

- SEED MIX 25-151 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 35-241 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- SEED MIX 33-261 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- RANDOM RIPRAP CL IV
- SEED MIX 25-151 FERTILIZER TYPE 3 EROSION CONTROL BLANKET CATEGORY 0
- SEED MIX 35-241 FERTILIZER TYPE 3 TURF REINFORCEMENT MAT CATEGORY 1 EROSION CONTROL BLANKET CATEGORY 3N
- STORM DRAIN INLET PROTECTION
- MS SILT FENCE, TYPE MS
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- RANDOM RIPRAP CL III
- DELINEATED WETLAND
- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEED MIX 33-261 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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REV.	BY	DATE

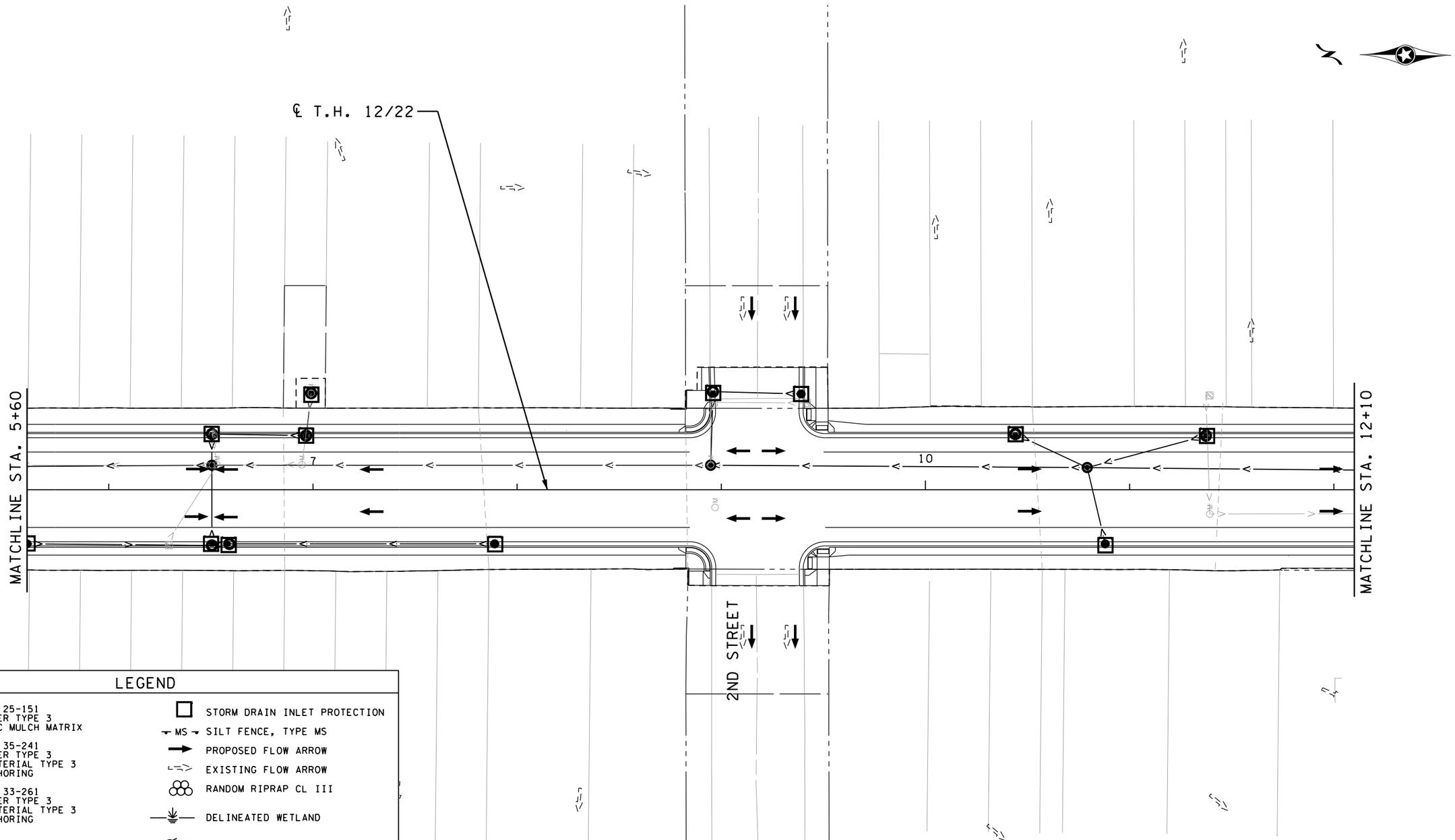
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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED JDZ
DRAWN LLK
CHECKED ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 12/22
TURF ESTAB. & EROSION CONTROL PLAN

SHEET 162 OF 239



LEGEND

- SEED MIX 25-151 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 35-241 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- SEED MIX 33-261 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- RANDOM RIPRAP CL IV
- SEED MIX 25-151 FERTILIZER TYPE 3 EROSION CONTROL BLANKET CATEGORY 0
- SEED MIX 35-241 FERTILIZER TYPE 3 TURF REINFORCEMENT MAT CATEGORY 1 EROSION CONTROL BLANKET CATEGORY 3N
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- EXISTING FLOW ARROW
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- DELINEATED WETLAND
- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEED MIX 33-261 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N

GENERAL NOTES:

1. SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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TURF ESTAB. & EROSION CONTROL PLAN

SHEET 163 OF 239

GENERAL NOTES:

1. SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.

MATCHLINE STA. 14+50

℄ T.H. 12

14

BURLINGTON NORTHERN RAILWAY

℄ T.H. 22

COMMERCIAL STREET

MATCHLINE STA. 12+10

68

65

63

℄ T.H. 12/22

W. DEPOT STREET

BEGIN S.P. 4705-47 (T.H. 12)
BEGIN S.A.P. 135-010-008 (DEPOT ST.)
STA. 12+80.87
END S.A.P. 135-010-009 (SIBLEY AVE.)
END S.P. 4709-32 (T.H. 22)
STA. 68+85.75
END S.P. 4704-89 (T.H. 12/22)
END S.A.P. 135-010-008 (SIBLEY AVE.)
STA. 12+87.87

BEGIN S.P. 4709-32 (T.H. 22)
BEGIN S.A.P. 135-010-009 (SIBLEY AVE.)
STA. 63+19.45

LEGEND

- SEED MIX 25-151 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 35-241 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- SEED MIX 33-261 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- RANDOM RIPRAP CL IV
- SEED MIX 25-151 FERTILIZER TYPE 3 EROSION CONTROL BLANKET CATEGORY 0
- SEED MIX 35-241 FERTILIZER TYPE 3 TURF REINFORCEMENT MAT CATEGORY 1 EROSION CONTROL BLANKET CATEGORY 3N
- STORM DRAIN INLET PROTECTION
- MS SILT FENCE, TYPE MS
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- RANDOM RIPRAP CL III
- DELINEATED WETLAND
- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEED MIX 33-261 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED	JDZ
DRAWN	LLK
CHECKED	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - T.H. 22
TURF ESTAB. & EROSION CONTROL PLAN

SHEET 164 OF 239

LEGEND

- SEED MIX 25-151
  FERTILIZER TYPE 3
  HYDRAULIC MULCH MATRIX
- SEED MIX 35-241
  FERTILIZER TYPE 3
  MULCH MATERIAL TYPE 3
  DISC ANCHORING
- SEED MIX 33-261
  FERTILIZER TYPE 3
  MULCH MATERIAL TYPE 3
  DISC ANCHORING
- RANDOM RIPRAP CL IV
- SEED MIX 25-151
  FERTILIZER TYPE 3
  EROSION CONTROL BLANKET
  CATEGORY 0
- SEED MIX 35-241
  FERTILIZER TYPE 3
  TURF REINFORCEMENT MAT
  CATEGORY 1
  EROSION CONTROL BLANKET
  CATEGORY 3N
- STORM DRAIN INLET PROTECTION
- MS SILT FENCE, TYPE MS
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- RANDOM RIPRAP CL III
- DELINEATED WETLAND
- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN
  TYPE MOVING WATER
- SEED MIX 33-261
  FERTILIZER TYPE 3
  EROSION CONTROL BLANKETS
  CATEGORY 3N

N. MARSHALL AVE.

N. HOLCOMBE AVE.

204

STA. 203+94.95
END S.A.P. 135-117-005
(HOLCOMBE AVE.)

E. 1ST STREET

MATCHLINE STA. 14+50

15

20

℄ T.H. 22

STA. 200+36.97
BEGIN S.A.P. 135-117-005
(HOLCOMBE AVE.)

STA. 21+36.33
END S.P. 4705-47 (T.H. 12)
END S.A.P. 135-117-005
(DEPOT ST.)

202

GENERAL NOTES:

1. SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.

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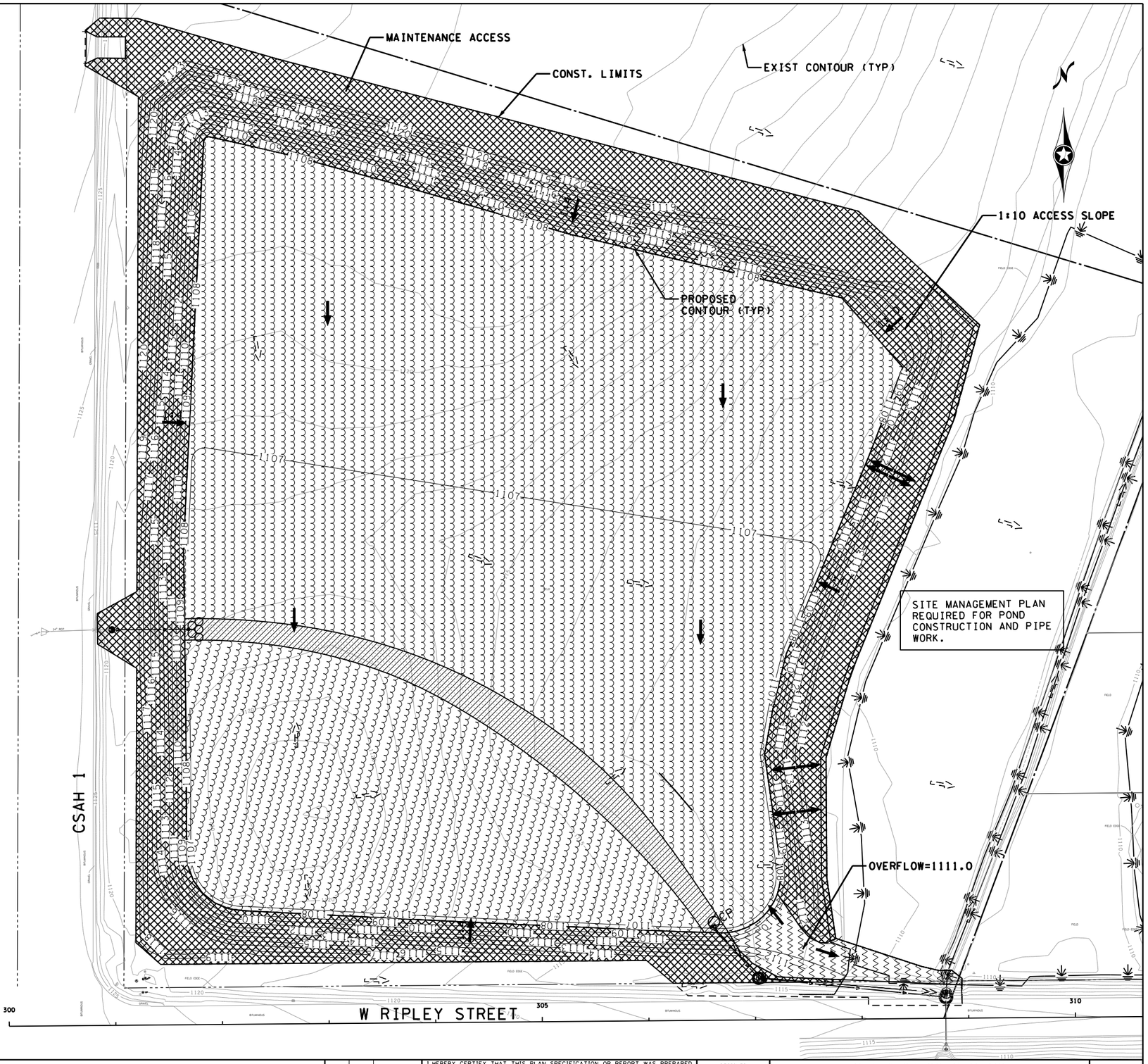
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T.H. 12/22 RECONSTRUCTION - T.H. 12
TURF ESTAB. & EROSION CONTROL PLAN

SHEET 165 OF 239

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GENERAL NOTES:

1. SEE GRADING PLAN FOR PROPOSED CONTOURS.
2. SUBSOILING AND SOIL BED PREPARATION ARE REQUIRED AT ALL DISTURBED AREAS.
3. SEE CONSTRUCTION PLANS FOR R/W, T/E, AND CONSTRUCTION LIMITS LINETYPES.



LEGEND

- SEED MIX 25-151 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 35-241 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
- SEED MIX 33-261 FERTILIZER TYPE 3 MULCH MATERIAL TYPE 3 DISC ANCHORING
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- SEED MIX 25-151 FERTILIZER TYPE 3 EROSION CONTROL BLANKET CATEGORY 0
- SEED MIX 35-241 FERTILIZER TYPE 3 TURF REINFORCEMENT MAT CATEGORY 1 EROSION CONTROL BLANKET CATEGORY 3N
- STORM DRAIN INLET PROTECTION
- MS SILT FENCE, TYPE MS
- PROPOSED FLOW ARROW
- EXISTING FLOW ARROW
- RANDOM RIPRAP CL III
- DELINEATED WETLAND
- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEED MIX 33-261 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N

0 50 100
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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ANTHONY C. ROTCHADL
LIC. NO. 54867 DATE 12-27-2018

DESIGNED	JDZ
DRAWN	LLK
CHECKED	ACR

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION - POND
TURF ESTAB. & EROSION CONTROL PLAN

SHEET 166 OF 239

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PERMANENT PAVEMENT MARKING PLAN

NOTES & GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY AN AGENCY PLACED YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO 3 INCHES FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

JUST PRIOR TO THE PLACEMENT OF PAVEMENT MARKINGS THE ROAD SURFACE SHALL BE CLEANED AND FREE OF CONTAMINATION AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE.

APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

REFER TO SPECIAL PROVISIONS OR SPEC BOOK FOR GROUND IN/RECESSED PAVEMENT MARKING APPLICATION REQUIREMENTS.

MULTI-COMPONENT LIQUID:

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENTS AND/OR LAITANCE.

THE MULTI-COMPONENT LIQUID MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI-COMPONENT LIQUID PAVEMENT MARKING.

APPLY MULTI-COMPONENT LIQUID MARKINGS WITH A MINIMUM THICKNESS OF 20 MILS; GLASS BEADS SHALL BE APPLIED AT A RATE OF AT LEAST 25 LB/GAL. THE "NO-TRACKING" CONDITION SHALL BE DETERMINED ON AN APPLICATION OF SPECIFIED THICKNESS TO THE PAVEMENT AND COVERED WITH GLASS BEADS AT THE RATE OF AT LEAST 25 LB/GAL.

PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 40°F OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OF DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

PERMANENT PAVEMENT MARKING PLAN INDEX

167	PERMANENT PAVEMENT MARKING TITLE SHEET
168	PERMANENT PAVEMENT MARKING TABULATION
169 - 171	PAVEMENT MARKING PLAN
172 - 175	DETAILS

SYMBOLS & MATERIALS LEGEND

— — — BROKEN LINE-50' CYCLE (10' LINE, 40' GAP)

CROSSWALK BLOCK

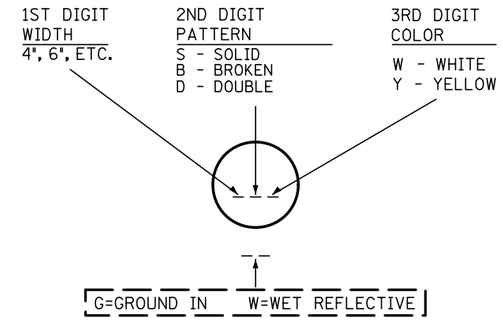
PAVEMENT MESSAGE (LEFT ARROW)

PAVEMENT MESSAGE (RIGHT ARROW)

RR RAILROAD MESSAGE

STRIPING KEY

CIRCLE-
MULTI-COMPONENT



EXAMPLE: (4SW / GW) = 4" SOLID LINE WHITE MULTI-COMPONENT GROUND IN, WET REFLECTIVE

MISC:
- (C&G) = DEFINED AS CURB AND GUTTER, MULTI-COMPONENT
- (PM / GW) = DEFINED AS PAVEMENT MARKING, MULTI-COMPONENT, GROUND IN, WET REFLECTIVE
- (CW / GW) = DEFINED AS CROSSWALK, MULTI-COMPONENT, GROUND IN, WET REFLECTIVE

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S.A.P. 135-117-005

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VERNON SWING
LIC. NO. 41417 DATE 11/15/2018

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S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
PAVEMENT MARKING PLAN

SHEET 167 OF 239

PERMANENT PAVEMENT MARKING TABULATION					M	
SPEC	ITEM DESCRIPTION	UNIT	YELLOW	WHITE	TOTAL	
2102	PAVEMENT MARKING REMOVAL	SQ FT		204	204	
2582	4" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	1059	1853	2912	
2582	6" SOLID LINE MULTI COMP GR IN (WR)	LIN FT		1797	1797	
2582	8" SOLID LINE MULTI COMP GR IN (WR)	LIN FT		146	146	
2582	12" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	86		86	
2582	24" SOLID LINE MULTI COMP GR IN (WR)	LIN FT		165	165	
2582	4" BROKEN LINE MULTI COMP GR IN (WR)	LIN FT	190		190	
2582	4" DBLE SOLID LINE MULTI COMP GR IN (WR)	LIN FT	1737		1737	
2582	PAVT MSSG MULTI COMP GR IN (WR)	SQ FT		333	333	(1)
2582	CROSSWALK MULTI COMP GR IN (WR)	SQ FT		3402	3402	
2582	PAVEMENT MARKING SPECIAL	LIN FT	1509		1509	(2)
2582	MOBILE RETROREFLECTOMETER MEASUREMENTS	LIN FT	7492	3796	11288	(3)

PERMANENT PAVEMENT MARKING TABULATION (S.P. BREAKDOWN)							M	
SPEC	ITEM DESCRIPTION	UNIT	S.P. 4704-89 S.A.P. 135-010-008 (T.H. 12/22) (C)	S.P. 4705-47 S.A.P. 135-010-008 (T.H. 12) (C)	S.P. 4709-32 S.A.P. 135-010-009 (T.H. 22) (C)	S.A.P. 135-117-005 HOLCOMBE AVE (D)	TOTAL	
2102	PAVEMENT MARKING REMOVAL	SQ FT			204		204	
2582	4" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	420	1873	619		2912	
2582	6" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	1797				1797	
2582	8" SOLID LINE MULTI COMP GR IN (WR)	LIN FT		35	111		146	
2582	12" SOLID LINE MULTI COMP GR IN (WR)	LIN FT		53	33		86	
2582	24" SOLID LINE MULTI COMP GR IN (WR)	LIN FT	32	76	57		165	
2582	4" BROKEN LINE MULTI COMP GR IN (WR)	LIN FT		140	10	40	190	
2582	4" DBLE SOLID LINE MULTI COMP GR IN (WR)	LIN FT	1010	448	279		1737	
2582	PAVT MSSG MULTI COMP GR IN (WR)	SQ FT	90	105	138		333	(1)
2582	CROSSWALK MULTI COMP GR IN (WR)	SQ FT	1692	468	612	630	3402	
2582	PAVEMENT MARKING SPECIAL	LIN FT	729	102	617	61	1509	(2)
2582	MOBILE RETROREFLECTOMETER MEASUREMENTS	LIN FT	4237	4855	1796	400	11288	(3)

SPECIFIC NOTES:

(1) PAVEMENT MESSAGE CONSISTS OF 12 LEFT TURN ARROWS, 1 RIGHT TURN ARROW, AND 2 RAILROAD CROSSING MESSAGES AS SHOWN IN PLANS.

(2) PAINTING OF NEW CURB AND GUTTER

(3) MEASUREMENTS TAKEN ON LONGITUDINAL MARKINGS, CENTER MARKINGS ARE TAKEN TWICE (ONCE IN EACH DIRECTION)

(C) 80% FEDERAL / 20% STATE FUNDS

(D) 100% CITY FUNDS

PAVEMENT MARKING TABULATION

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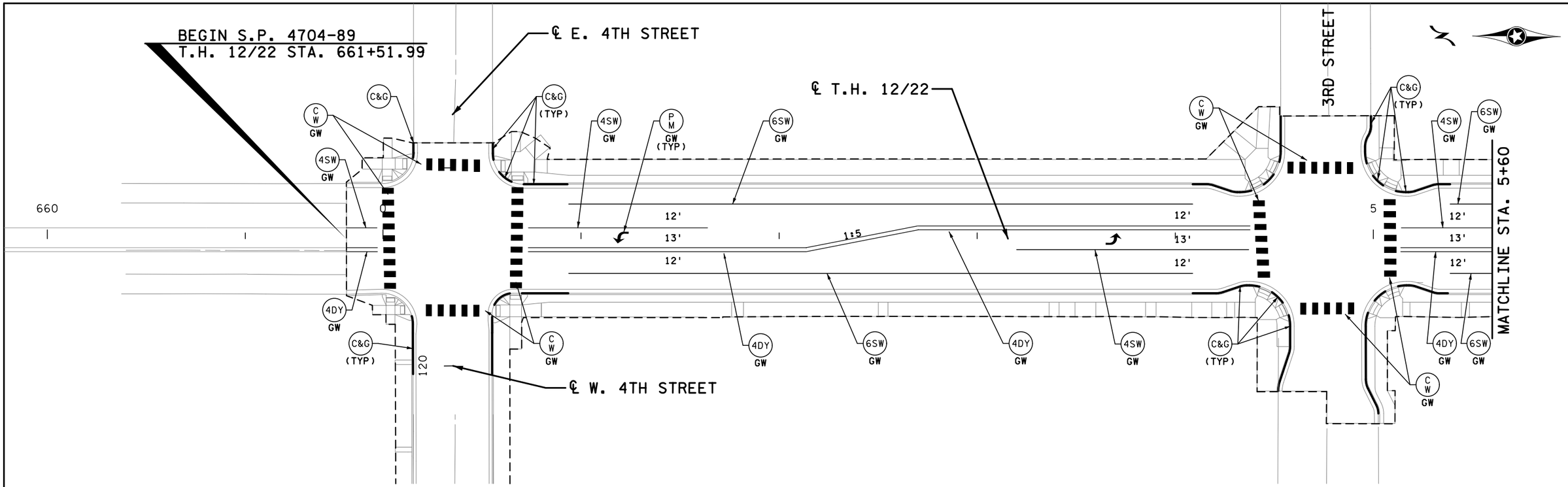
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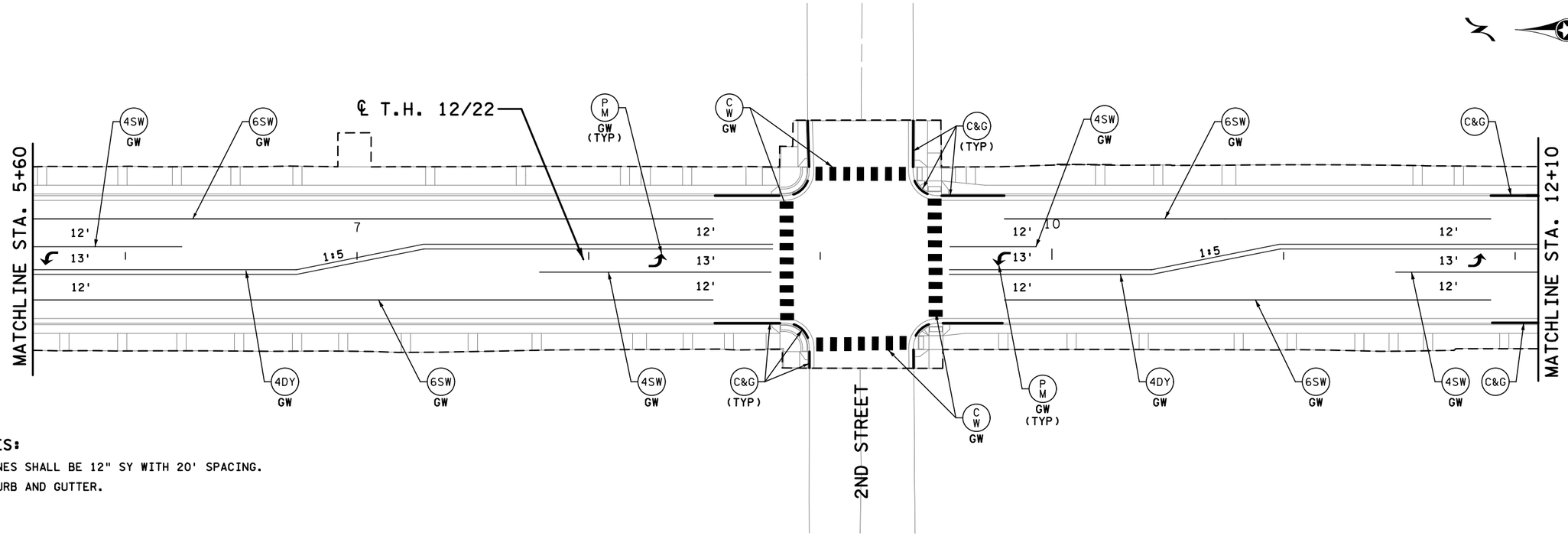
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S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
PAVEMENT MARKING PLAN

SHEET 168 OF 239





GENERAL NOTES:

- CROSSHATCH LINES SHALL BE 12" SY WITH 20' SPACING.
- REPAINT NEW CURB AND GUTTER.

PAVEMENT MARKING LAYOUT

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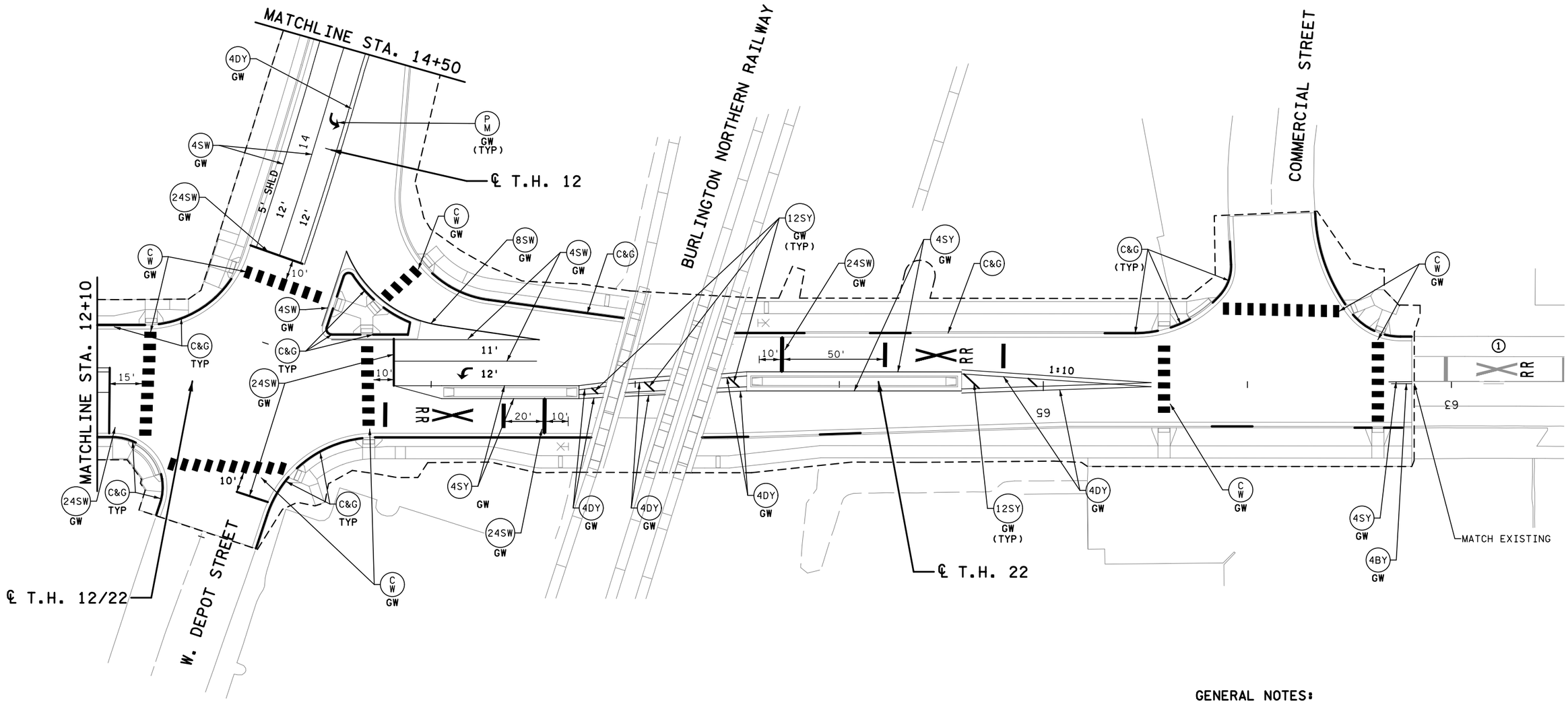
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T.H. 12/22 RECONSTRUCTION
PAVEMENT MARKING PLAN

SHEET 169 OF 239



GENERAL NOTES:

- CROSSHATCH LINES SHALL BE 12" SY WITH 20' SPACING.
- REPAINT NEW CURB AND GUTTER.

SPECIFIC NOTES:

① REMOVE RAILROAD CROSSING PAVEMENT MESSAGE

PAVEMENT MARKING LAYOUT

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SCALE FEET

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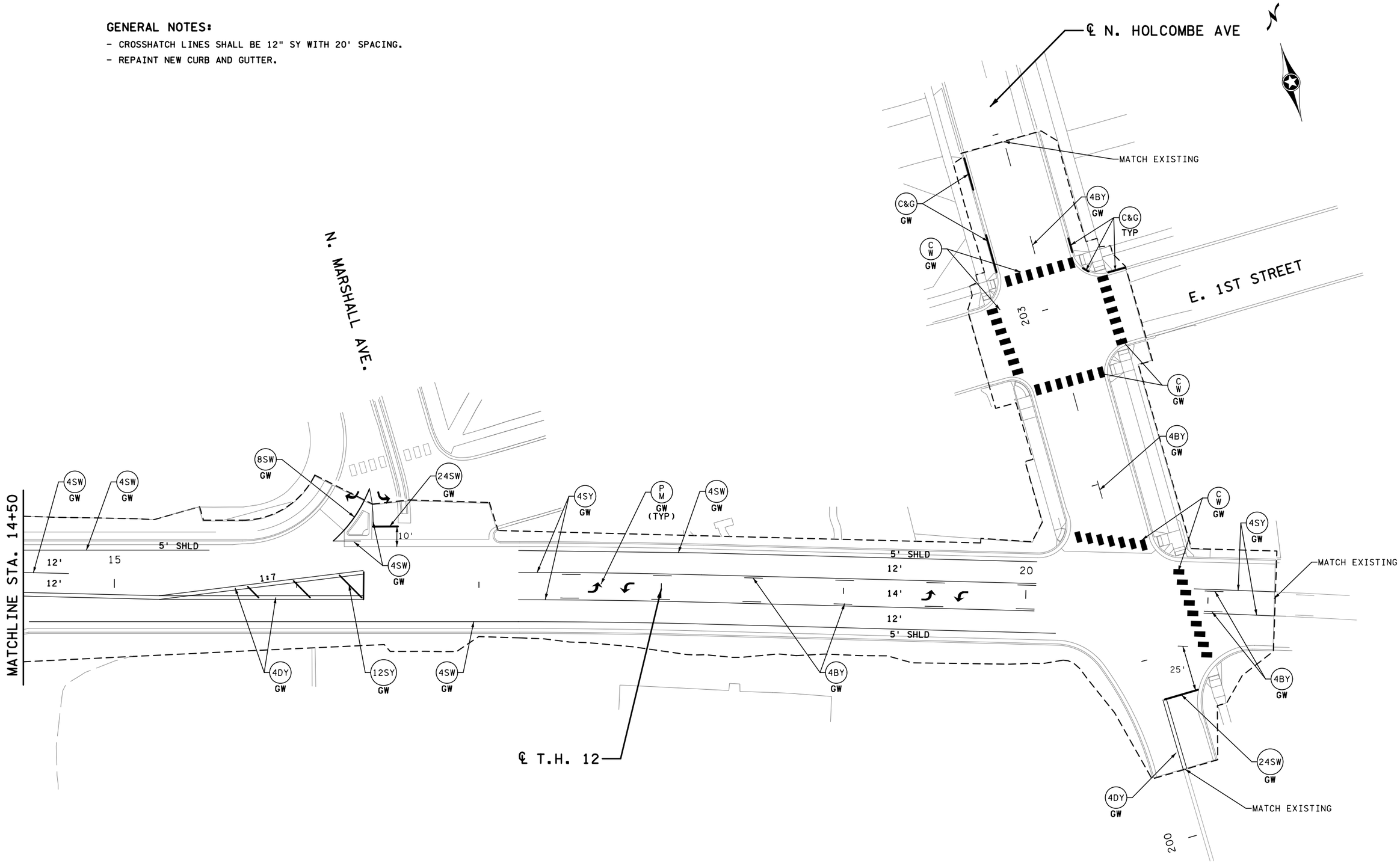
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DRAWN	SFH
CHECKED	VES

S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
PAVEMENT MARKING PLAN

SHEET 170 OF 239

GENERAL NOTES:

- CROSSHATCH LINES SHALL BE 12" SY WITH 20' SPACING.
- REPAINT NEW CURB AND GUTTER.



PAVEMENT MARKING LAYOUT

0 25 50
SCALE FEET

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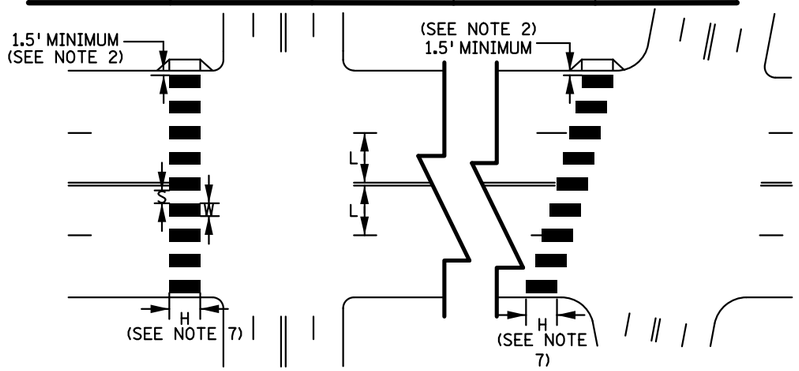
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DRAWN	SFH
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S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
PAVEMENT MARKING PLAN

SHEET 171 OF 239

PEDESTRIAN CROSSWALK MARKINGS

(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREA	(S) WIDTH OF SPACE	ALTERNATE (W) WIDTH OF PAINTED AREA	ALTERNATE (S) WIDTH OF SPACE
9′	2.0′	2.5′	—	—
10′	2.5′	2.5′	2.0′	3.0′
11′	2.5′	3.0′	2.0′	3.5′
12′	3.0′	3.0′	2.5′	3.5′
13′	3.0′	3.5′	—	—

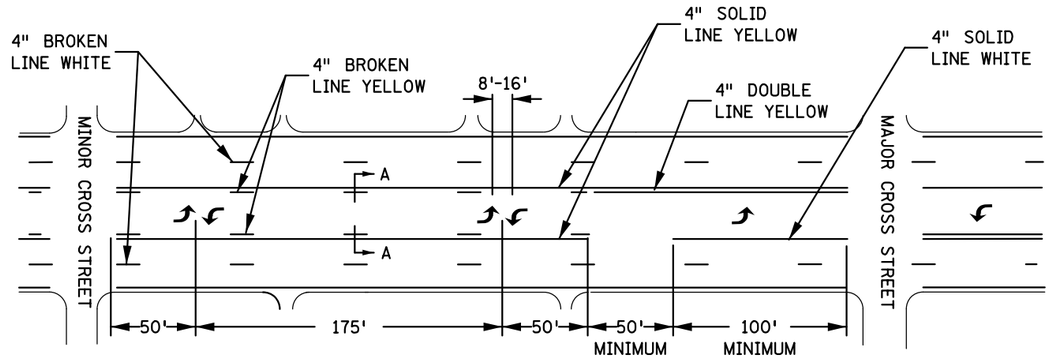


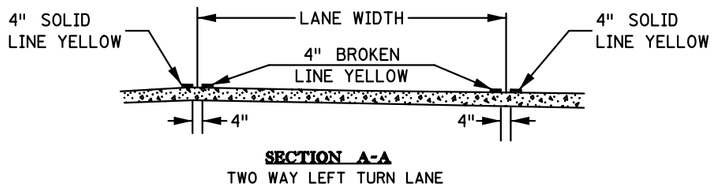
NOTES:

1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FT. CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB FACE. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FT. INSIDE LANE.
4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.
6. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES.
7. THE BLOCKS SHALL BE A MINIMUM OF 6' LONG AND AT LEAST AS LONG AS THE TRUNCATED DOMES, FOR FANNED TRUNCATED DOMES THE BLOCKS SHALL BE AT LEAST AS LONG AS THE APPROACHING SIDEWALK OR SHARED USE PATH.
8. THE ALTERNATE (W) AND (S) MAY BE USED WHEN BLOCKS LONGER THAN 6' (H) ARE USED.

PUBLISHED BY OTST: 20 NOV 2015 | MODIFIED:

TWO-WAY LEFT-TURN LANE





SECTION A-A
TWO WAY LEFT TURN LANE

PUBLISHED BY OTST: 14 OCT 2016 | MODIFIED:

PAVEMENT MARKING DETAILS

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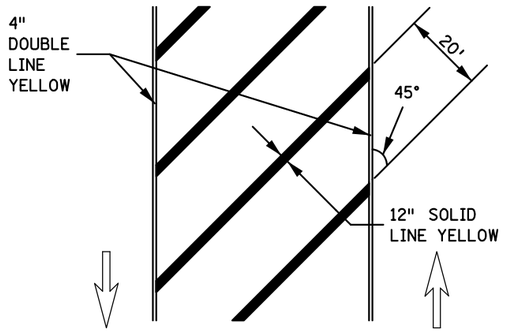
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S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
PAVEMENT MARKING PLAN

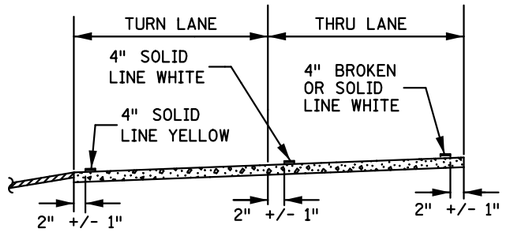
SHEET 172 OF 239

CROSSHATCHING

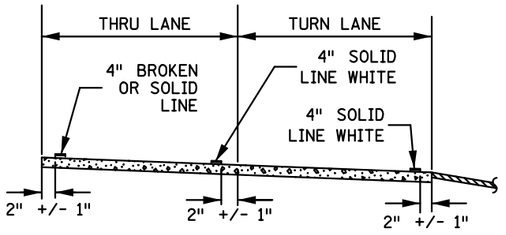


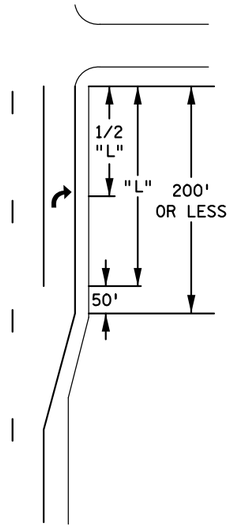
TURN LANE WITH ARROW MESSAGE

LEFT TURN LANE



RIGHT TURN LANE





NOTE:
END PAVEMENT MARKINGS AT
BEGINNING OF RADIUS

PUBLISHED BY OTST: 6 APR 2018 | MODIFIED: 19 SEP 2018

PAVEMENT MARKING DETAILS

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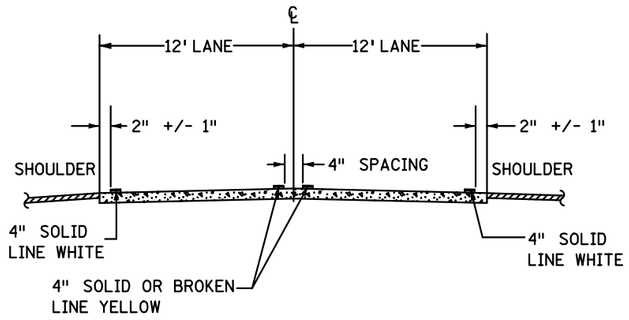
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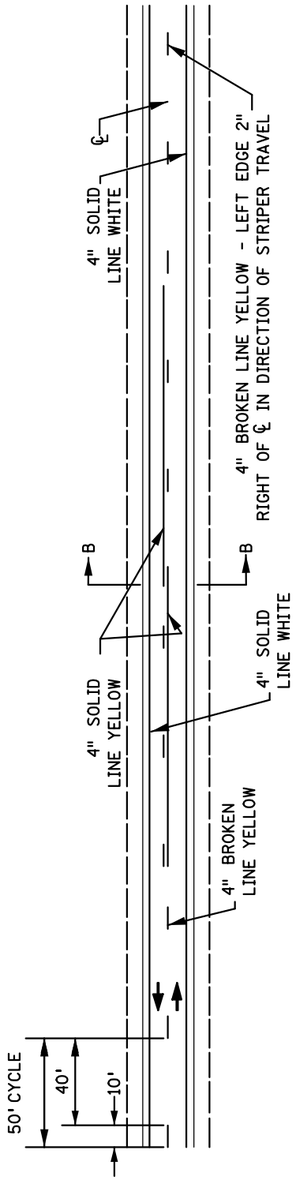
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PAVEMENT MARKING PLAN

SHEET 173 OF 239

TWO-LANE, TWO-WAY

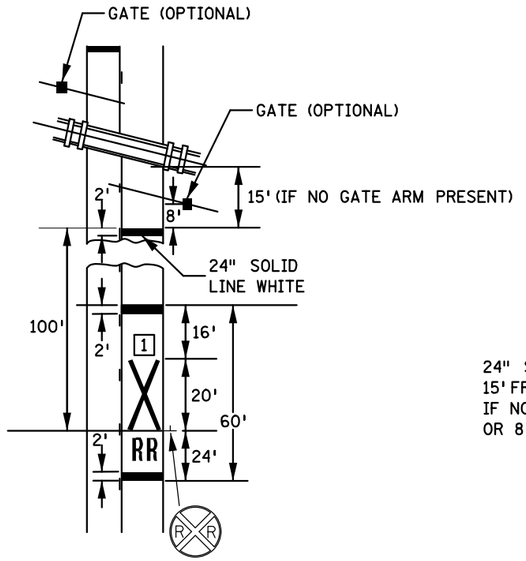


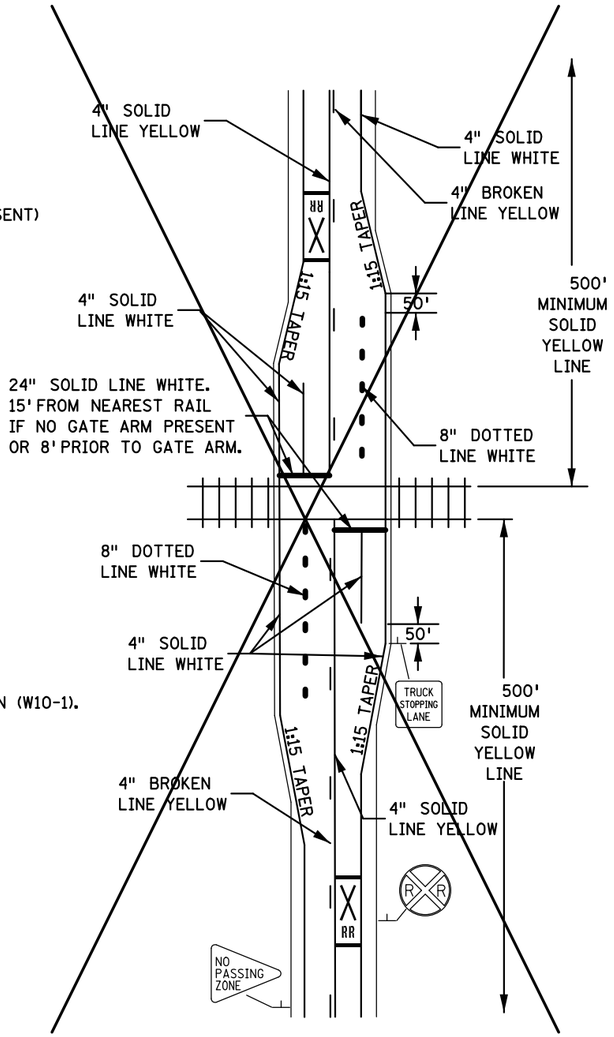
SECTION B-B



PUBLISHED BY OTST: 20 NOV 2015 | MODIFIED:

RAILROAD CROSSING WITH TRUCK STOPPING LANE





NOTES:

SIGN LOCATION FOR REFERENCE ONLY.

[1] WHEN USED, A PORTION OF THE PAVEMENT MARKING SYMBOL SHOULD BE DIRECTLY OPPOSITE THE ADVANCE WARNING SIGN (W10-1).

PUBLISHED BY OTST: 13 APR 2018 | MODIFIED: 19 SEP 2018

PAVEMENT MARKING DETAILS

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VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

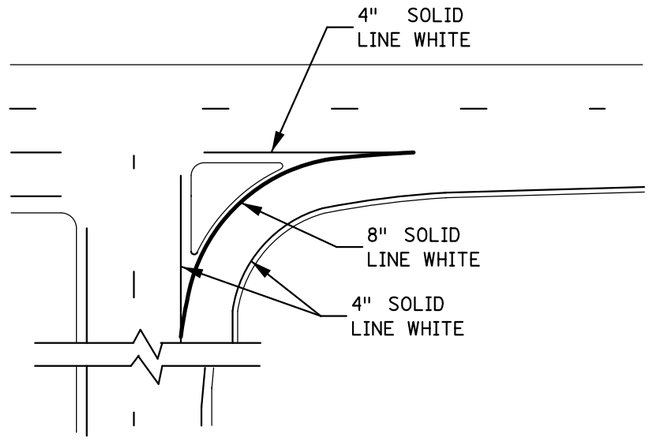
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CHECKED	VES

S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
PAVEMENT MARKING PLAN

SHEET 174 OF 239

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FREE RIGHT MERGE/YIELD CONDITION



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PAVEMENT MARKING DETAILS

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
PAVEMENT MARKING PLAN

SHEET 175 OF 239

SIGNING TABULATION								N
SPEC	ITEM	UNIT	S.P. 4704-89 S.A.P. 135-010-008 (T.H. 12/22) (C)	S.P. 4704-89 S.A.P. 135-010-008 (4TH STREET) (D)	S.P. 4705-47 S.A.P. 135-010-008 (T.H. 12) (C)	S.P. 4709-32 S.A.P. 135-010-009 (T.H. 22) (C)	S.A.P. 135-117-005 (E) HOLCOMBE AVE	TOTAL
2104	REMOVE SIGN TYPE C	EACH	21	15	6	3	2	47
2104	SALVAGE SIGN TYPE C	EACH	13	4	8		2	27
2564	INSTALL SIGN TYPE C	EACH	13	4	8		2	27
2564	SIGN PANELS TYPE C	SQ. FT.	62	88	52	58	19	279

(C) 80% FEDERAL / 20% STATE FUNDS
(D) 24% FEDERAL / 6% STATE / 70% CITY FUNDS
(E) 100% CITY FUNDS

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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SIGNING TABULATION

S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNING PLAN

SHEET 176 OF 239

SIGN PANELS TYPE C

SIGN NO.	QUANT.	POSTS NO. & TYPE	POSTS KNEE BRACES QUANT.	POSTS LEN. (FT.)	MTG HT. (FT.)	PANEL SIZE (IN.)	PANEL AREA (SQ. FT.)	PANEL TOTAL AREA (SQ. FT.)	CODE NO.	PANEL LEGEND	COST PARTICIPATION SIGN PANELS TYPE C UNIT	(1)(C)	(2)(D)	(3)(C)	(4)(C)	(5)(G)	TOTAL	COST PARTICIPATION REMOVE SIGN PANELS TYPE C UNIT	(1)(C)	(2)(D)	(3)(C)	(4)(C)	(5)(G)	TOTAL
C-1	8	2-U		13	7	30 x 30	6.25	50.00	R1-1	STOP	SQ FT		43.75			6.25	50.00	EACH		7			1	8
C-2	1	2-U		11	7	36 x 12	3.00	3.00	R6-1R	ONE WAY	SQ FT	3.00					3.00	EACH	1					1
C-3	3	2-U		11	7	36 x 12	3.00	9.00	R6-1L	ONE WAY	SQ FT	6.00	3.00				9.00	EACH	2	1				3
C-4	1	2-U		13	7	30 x 30	6.25	6.25	R5-1	DO NOT ENTER	SQ FT		6.25				6.25	EACH		1				1
C-5	1	2-U		13	7	30 x 30	6.25	6.25	R5-1	DO NOT ENTER	SQ FT		6.25				6.25	EACH		1				1
						24 x 30	5.00	5.00	R6-7	END ONE WAY	SQ FT		5.00				5.00	EACH		1				1
C-6	1	2-U		13	7	24 x 30	5.00	5.00	R6-6	BEGIN ONE WAY	SQ FT	5.00					5.00	EACH	1					1
C-7	7	0		10	7	12 x 18	1.50	10.50	R7-2	NO PARKING 2 AM TO 6 AM	SQ FT	10.50					10.50	EACH	7					7
C-8	1	1-ST		9	7	36 x 12	3.00	3.00	R6-1R	ONE WAY	SQ FT			3.00			3.00	EACH			1			1
C-9	1	1-ST		12	7	24 x 30	5.00	5.00	R1-X1	STOP FOR PEDESTRIAN IN CROSSWALK	SQ FT	5.00					5.00	EACH	1					1
						12 x 18	1.50	1.50	R7-2	NO PARKING 2 AM TO 6 AM	SQ FT	1.50					1.50	EACH	1					1
						36 x 12	3.00	3.00	R6-1L	ONE WAY	SQ FT	3.00					3.00	EACH	1					1
C-10	2	1-ST		11	7	36 x 12	3.00	6.00	R6-1R	ONE WAY	SQ FT	6.00					6.00	EACH	2					2
						12 x 18	1.50	3.00	CUSTOM/INP.	CYCLISTS MUST DISMOUNT. PEDESTRIAN ZONE	SQ FT	3.00					3.00	EACH						
C-11	1	0			7	24 x 48	8.00	8.00	D9-2AT	HOSPITAL	SQ FT	8.00					8.00	EACH	1					1
						12 x 18	1.50	1.50	R7-2	NO PARKING 2 AM TO 6 AM	SQ FT	1.50					1.50	EACH	1					1
C-12	2	1-ST		10	7	36 x25.5	6.38	12.75	R1-2	YIELD	SQ FT			6.38	6.38		12.75	EACH			1	1		2
C-13	1	1-ST		7	4	18 x 18	2.25	2.25	X4-2	TYPE 1 OBJECT MARKER	SQ FT			2.25			2.25	EACH			1			1
C-14	5	1-ST		11	7	24 x 30	5.00	25.00	R4-7	KEEP RIGHT	SQ FT			5.00	20.00		25.00	EACH			1			1
					4	18 x 18	2.25	11.25	X4-2	TYPE 1 OBJECT MARKER	SQ FT			2.25	9.00		11.25	EACH			1			1
C-15	1	1-ST		12	7	24 x 30	5.00	5.00	R1-X1	STOP FOR PEDESTRIAN IN CROSSWALK	SQ FT	5.00					5.00	EACH	1					1
						12 x 18	1.50	1.50	R7-2	NO PARKING 2 AM TO 6 AM	SQ FT	1.50					1.50	EACH	1					1
						36 x 12	3.00	3.00	R6-1L	ONE WAY	SQ FT	3.00					3.00	EACH	1					1
C-16	1	0			7	36 x 24	6.00	6.00	D7-X18L	WORKFORCE CENTER	SQ FT			6.00			6.00	EACH			1			1
C-17	2	1-ST		11	7	30 x 30	6.25	12.50	R1-1	STOP	SQ FT			12.50	6.25	12.50	31.25	EACH				1	1	2
C-18	1	2-U		15	7	30 x 30	6.25	6.25	R1-1	STOP	SQ FT		6.25				6.25	EACH		1				1
						24 x 24	4.00	4.00	R3-1	NO RIGHT TURNS	SQ FT		4.00				4.00	EACH		1				1
C-19	2	2U-1A	1	13	7	36 DIA	7.07	14.14	W10-1	RAILROAD ADVANCED WARNING	SQ FT				14.14		14.14	EACH				1		1
C-20	1	1-ST		12	7	24 x 36	6.00	6.00	R3-9b	TWO WAY LEFT TURN ONLY	SQ FT			6.00			6.00	EACH						
C-21	2	1-ST		7	4	18 x 18	2.25	4.50	X4-2	TYPE 1 OBJECT MARKER	SQ FT			2.25	2.25		4.50	EACH						
C-22	1	0			7	36 x 12	3.00	3.00	R6-1R	ONE WAY	SQ FT		3.00				3.00	EACH		1				1
C-23	1	0			7	24 x 36	6.00	6.00	R3-9b	TWO WAY LEFT TURN ONLY	SQ FT			6.00			6.00	EACH						
C-24	1	2-U		15	7	30 x 30	6.25	6.25	R1-1	STOP	SQ FT		6.25				6.25	EACH		1				1
						24 x 24	4.00	4.00	R3-2	NO LEFT TURNS	SQ FT		4.00				4.00	EACH						
TOTAL								240.14			SQ FT	62.00	87.75	51.63	58.01	18.75	278.14	EACH	21	15	6	3	2	47

SALVAGE & INSTALL SIGN TYPE C

	SIGN NO.	QUANT.	POSTS NO. & TYPE	POSTS LEN. (FT.)	MTG HT. (FT.)	PANEL SIZE	PANEL LEGEND	COST PARTICIPATION SALVAGE & INSTALL SIGN TYPE C UNIT	(1)(C)	(2)(D)	(3)(C)	(4)(C)	(5)(G)
(8)	D-201	1	1-ST		7	36 x 30	PARKING WITH RIGHT ARROW	EACH	1				
	C-202	7	1-ST	10	7	12 x 18	CYCLISTS MUST DISMOUNT. PEDESTRIAN ZONE	EACH	7				
(8)	D-203	1	1-ST		7	36 x 30	PARKING WITH LEFT ARROW	EACH	1				
(6)(7)	D-204	1	0		9		SIBLEY AVE N AND FOURTH ST	EACH	1				
(6)	D-205	1	0		7		SIBLEY AVE N AND SECOND ST	EACH	1				
	D-206	1	1-ST		7		FOURTH ST W AND AUSTIN AVE N	EACH		1			
	D-207	1	1-ST		7		FOURTH ST W AND SWIFT AVE N	EACH		1			
	D-208	1	1-ST		7		FOURTH ST W AND MILLER AVE N	EACH		1			
	D-209	1	1-ST		7		FOURTH ST W AND RAMSEY AVE N	EACH		1			
	D-211	1	1-ST		7		FIRST ST E AND HOLCOMBE AVE N	EACH					1
	C-212	1	2-U		7	21 x 15	JCT	EACH	1				
						24 x 24	MEEKER 11 COUNTY	EACH	1				
	C-213	1	0		7	24 x 24	NO PARKING	EACH			1		
	C-214	1	1-ST		7	26 x 30	LT THRU, RT ONLY	EACH			1		
						24 x 24	NO PARKING	EACH			1		
	C-215	2	1-ST		7	30 x 30	STOP	EACH			2		1
	C-216	1	0		7	30 x 36	SPEED LIMIT 30	EACH			1		
	C-217	1	0		7	24 x 12	EAST	EACH			1		
						24 x 24	US 12	EACH			1		
	TOTAL	23						TOTAL	13	4	8		2

MOUNT LEGEND
U = VERTICAL U-POST
A = KNEE BRACE
ST = SQUARE TUBE

SPECIFIC NOTES:
(1) S.P. 4704-89 / S.A.P. 135-010-008 / (T.H. 12/22)
(2) S.P. 4704-89 / S.A.P. 135-010-008 / (4TH STREET)
(3) S.P. 4705-47 / S.A.P. 135-010-008 / (T.H. 12)
(4) S.P. 4709-32 / S.A.P. 135-010-008 / (T.H. 22)
(5) S.A.P. 135-117-005 / HOLCOMBE AVE
(6) SALVAGE & INSTALL INCLUDES PANEL AND BRACKETS.
(7) F&I CITY POST, ACCORDING TO CITY STANDARDS, NEAR EXISTING SIGN LOCATION AT THE EXISTING SIGN HEIGHT
(8) INPLACE SIGN MOUNTED OVERHEAD
(C) 80% FEDERAL / 20% STATE FUNDS
(D) 24% FEDERAL / 6% STATE / 70% CITY FUNDS
(G) 100% CITY FUNDS

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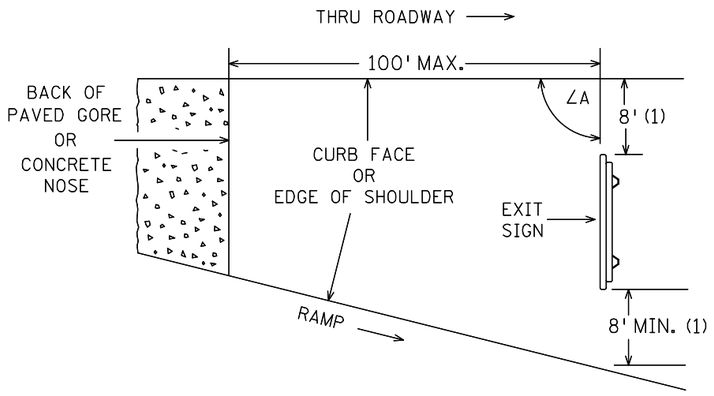
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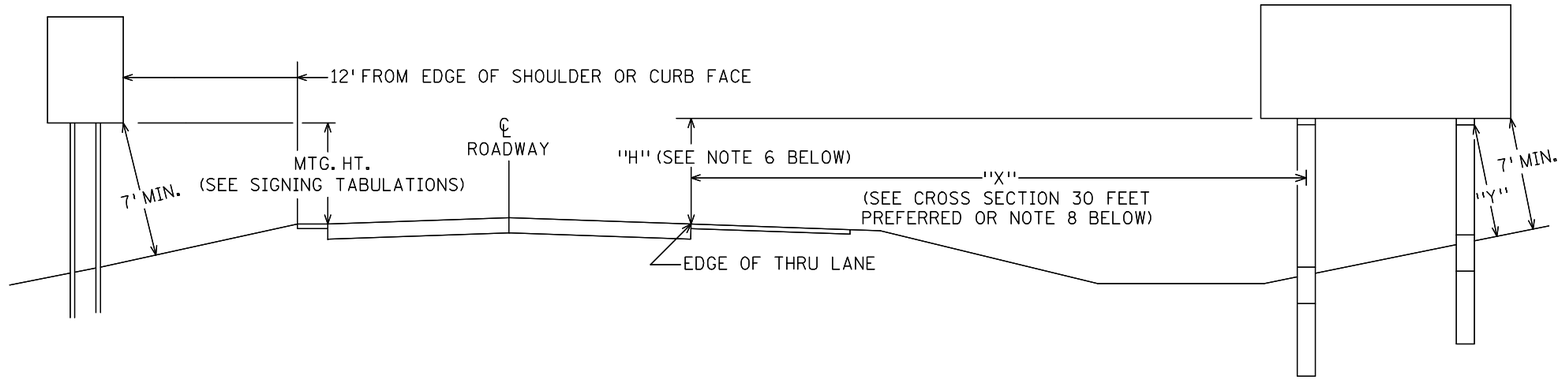
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SIGNING PLAN

SHEET 177 OF 239

GORE PLACEMENT

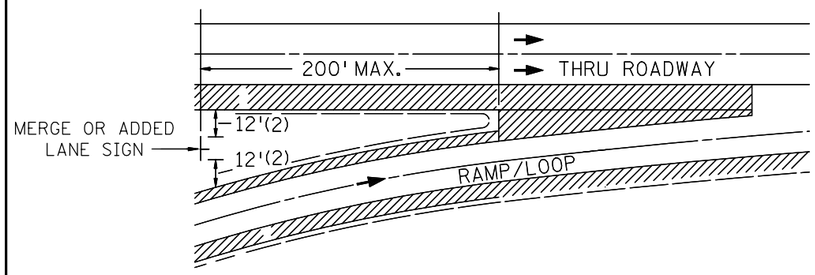


ROADSIDE PLACEMENT



ROUTE MARKER, REGULATORY & WARNING SIGNS - TYPE C
GUIDE SIGNS - TYPE D

GUIDE SIGN - TYPE A



SPECIFIC NOTES:

(1) EXIT SIGN
IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER.

(2) MERGE OR ADDED LANE SIGN
IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER.

NOTES:

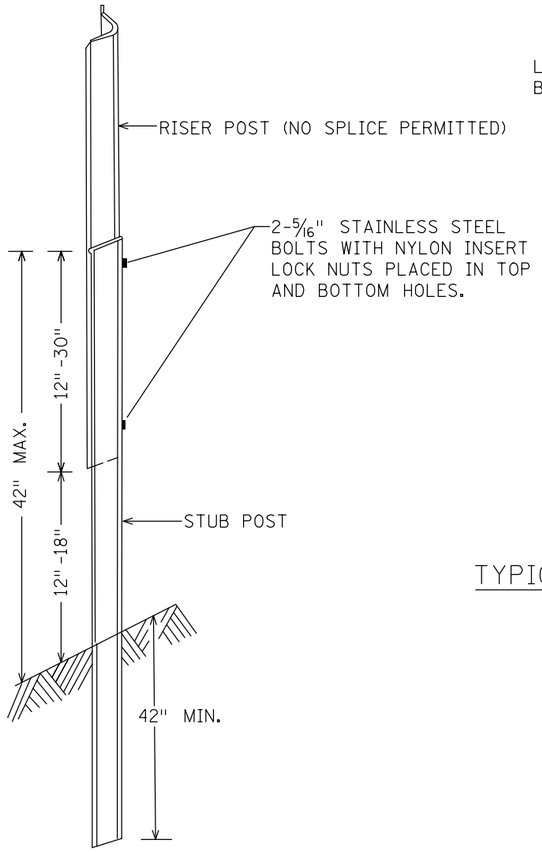
1. ALL TYPE C AND D MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE ELEVATION OF THE NEAR EDGE OF PAVEMENT IN RURAL AREAS OR TO THE TOP OF THE CURB OR IN THE ABSCENCE OF CURB, TO THE NEAR EDGE OF THE TRAVELED WAY.
2. SIGN FACES SHALL BE VERTICAL.
3. OVERHEAD SIGNS SHALL BE POSITIONED AT RIGHT ANGLES TO THE THRU ROADWAY UNLESS OTHERWISE NOTED.
4. TO AVOID SPECULAR GLARE, ∠A SHALL BE APPROXIMATELY 93° FOR SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF THRU LANE AND APPROXIMATELY 92° FOR SIGNS LOCATED 30' OR MORE FROM EDGE OF THRU LANE. THIS APPLIES TO SIGNS TYPE A, C, & D AND INCLUDES SIGNS IN THE GORE.
5. "Y" IS THE PERPENDICULAR DISTANCE FROM THE GROUND LINE TO THE FRICTION FUSE ON THE POST. THIS DISTANCE SHALL BE AT LEAST 7'.
6. WHERE "X" IS LESS THAN 30', "H" SHALL BE 7'. WHERE "X" IS 30' OR GREATER, MINIMUM AND PREFERRED "H" IS 5'.
7. LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND OR LEFT SIDE INSTALLATION.
8. WHEN A TYPE A SIGN IS INSTALLED DIRECTLY BEHIND TRAFFIC BARRIER, THE LEFT EDGE OF THE SIGN PANEL SHALL BE LOCATED A MINIMUM OF 8 FEET BEHIND THE FACE OF THE TRAFFIC BARRIER.

SIGN PLACEMENT

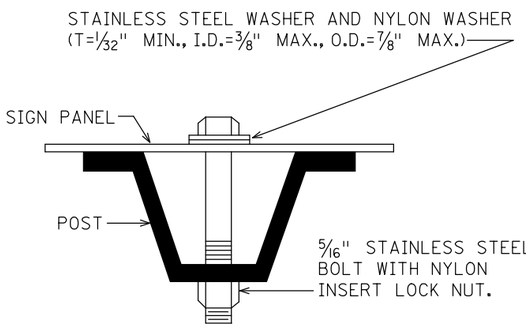
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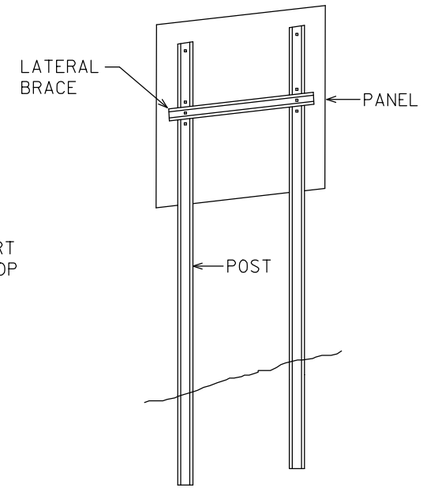
TYPE C & D POST



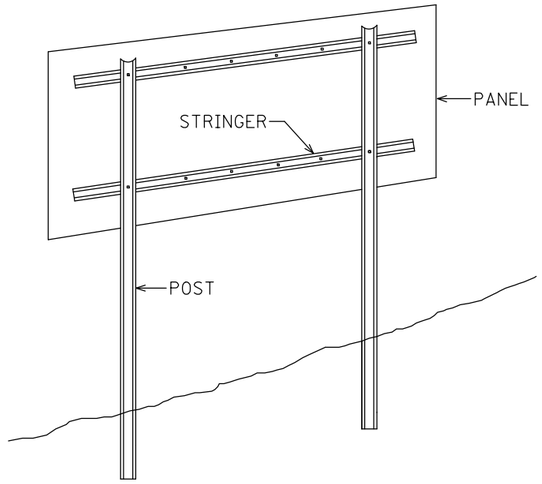
U POST BREAKAWAY SPLICE



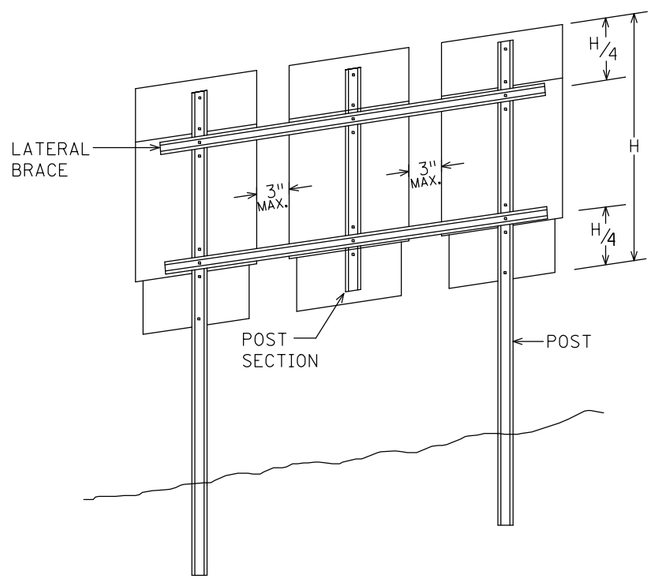
U POST MOUNTING
TYPE C SIGNS



TYPICAL TYPE C INSTALLATION



TYPICAL TYPE D INSTALLATION



MODIFIED TYPE C INSTALLATION

NOTES:

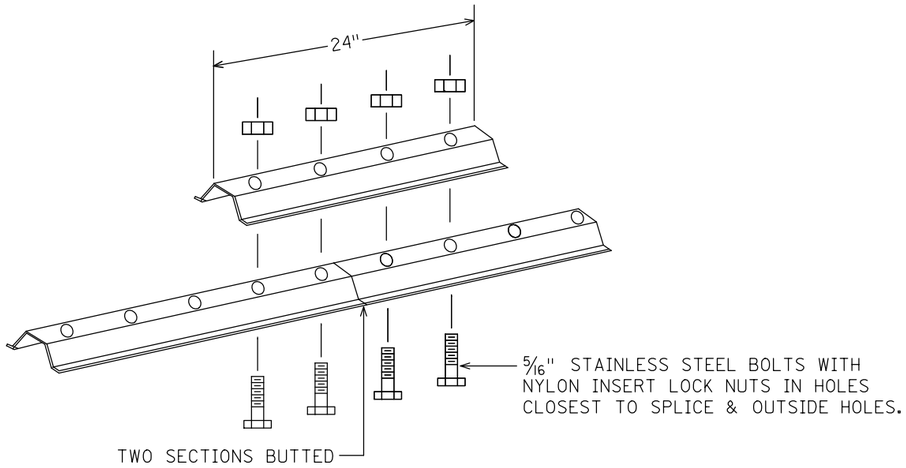
1. USE 3 LB/FT STUB POSTS. SHALL CONFORM TO MNDOT 3401.
2. USE 2.5 LB/FT RISER POSTS, STRINGERS, KNEE BRACES AND LATERAL BRACES. ALL SHALL CONFORM TO MNDOT 3401.
3. SEE SIGN DATA SHEETS FOR NUMBER OF POSTS, KNEE BRACES, POST LENGTHS AND SPACINGS, AS DETERMINED FROM TEM CHARTS 6.3 AND 6.4.
4. IF MORE THAN TWO POSTS ARE NEEDED, THE MINIMUM SPACING SHALL BE 45" BETWEEN POSTS.
5. TYPE D SIGN PANELS SHALL BE BOLTED TO STRINGERS AT 24" MAXIMUM INTERVALS IN ACCORDANCE WITH THE TYPE D STRINGER AND PANEL-JOINT DETAIL (SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL).
6. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL UNLESS OTHERWISE SPECIFIED.
7. ALL RISER (VERTICAL) U POSTS SHALL BE SPLICED. DRIVEN STUB POSTS SHALL BE AT LEAST 7' LONG.
8. USE STAINLESS STEEL 5/16" BOLTS, WASHERS AND NYLON INSERT LOCK NUTS AS SHOWN FOR ALL GROUND MOUNTED AND OVERHEAD MOUNTED SIGNS.
9. STAINLESS STEEL WASHER WITH SAME DIMENSIONS SHALL BE PROVIDED BETWEEN ALL NYLON WASHERS AND BOLT HEADS.
10. BRACING STUBS SHALL BE NO MORE THAN 4" ABOVE GROUND AND EMBEDDED AT LEAST 42".
11. A-FRAME BRACKET SHALL BE STEEL CONFORMING TO MNDOT 3306 AND GALVANIZED IN ACCORDANCE WITH MNDOT 3394.
12. COLLARS SHALL BE USED TO SHIM OVERLAYS AND LEGEND COMPONENTS AWAY FROM PANEL WHERE INTERFERENCE WITH BOLT HEADS IS ENCOUNTERED. MNDOT 3352.2A6.
13. 2 POST TYPE C SIGNS SHALL BE REINFORCED WITH AT LEAST ONE LATERAL BRACE. INSTALLATIONS WHERE THE TOTAL PANEL HEIGHT IS 60" OR MORE SHALL HAVE TWO LATERAL BRACES LOCATED APPROXIMATELY AT THE QUARTER POINTS.
14. WHERE 2 SINGLE POST TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND LOCATED APPROXIMATELY AT THE QUARTER POINTS.
15. WHERE 3 OR MORE TYPE C SIGNS ARE INSTALLED SIDE BY SIDE, THEY SHALL BE REINFORCED LATERALLY BY AT LEAST 2 BRACES, BOLTED AT EACH POST AND POST SECTION AND LOCATED APPROXIMATELY AT THE QUARTER POINTS AS SHOWN IN MODIFIED TYPE C INSTALLATION.

TYPE C & D SIGN
STRUCTURAL DETAILS

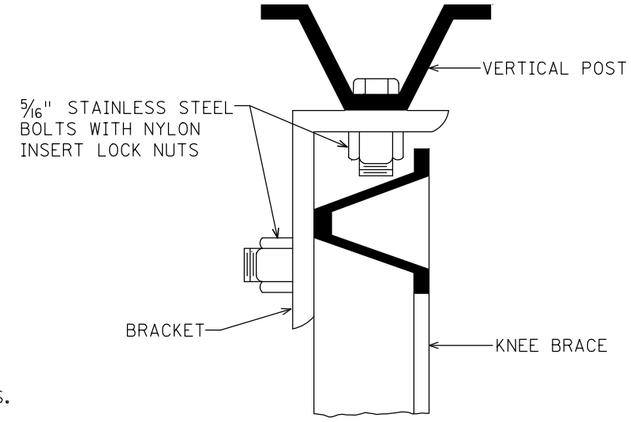
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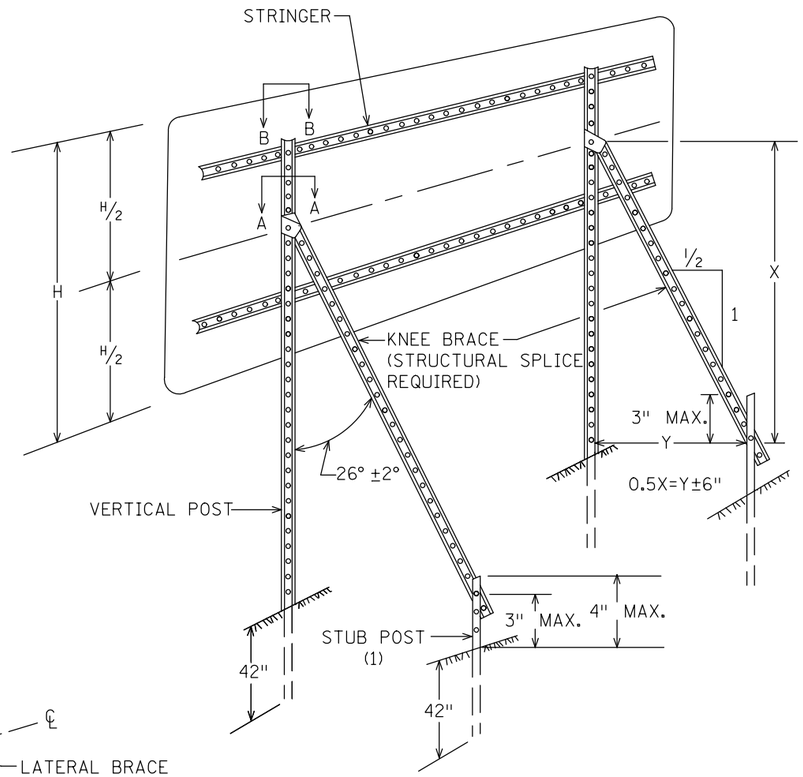
STATE PROJ. NO. S.P. 4704-89 SHEET NO. 179 OF 239 SHEETS



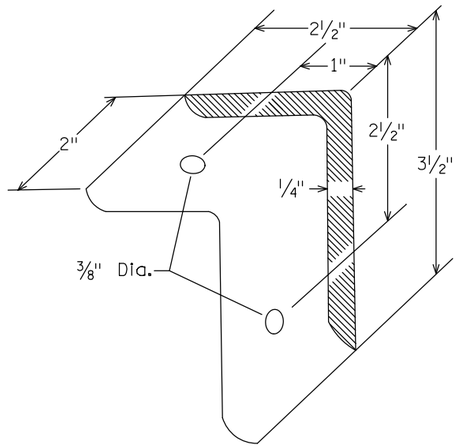
LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

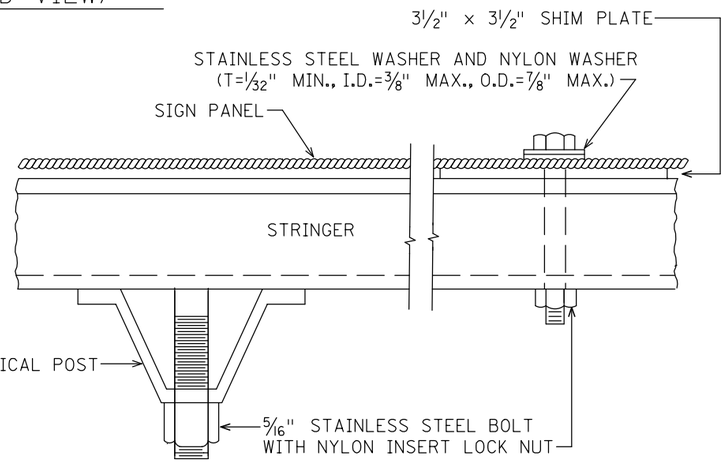


TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS

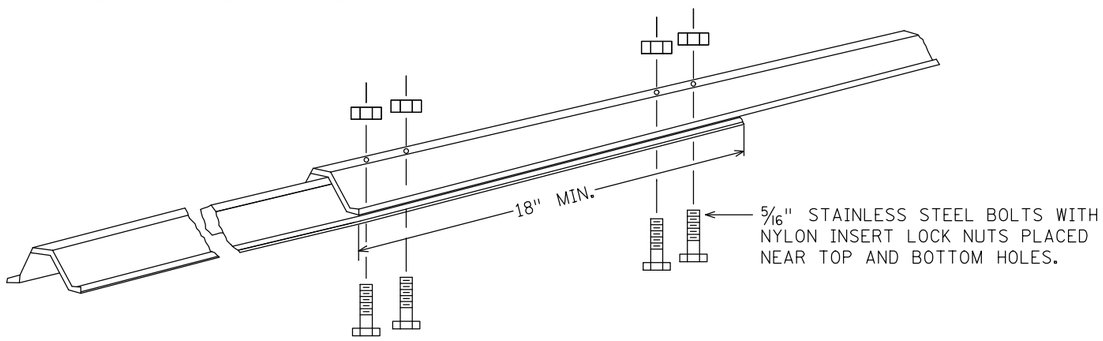


A-FRAME BRACKET

(STEEL MNDOT 3306 GALVANIZED PER MNDOT 3394)

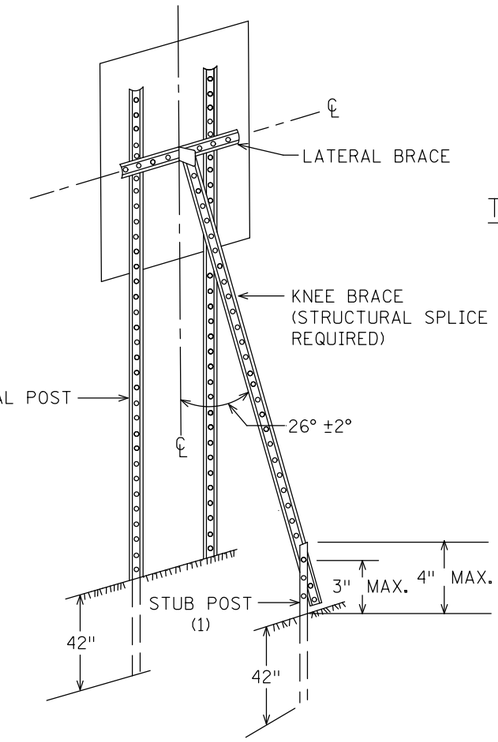


SECTION B-B

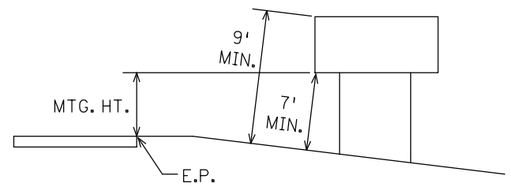


STRUCTURAL SPLICE

(USE WHEN IT IS NECESSARY TO FABRICATE THE CORRECT LENGTH OF POST FROM TWO PIECES)



TYPICAL "A-FRAME" INSTALLATION
TYPE "C" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST. ATTACH STUB POST AND KNEE BRACE BACK TO BACK.

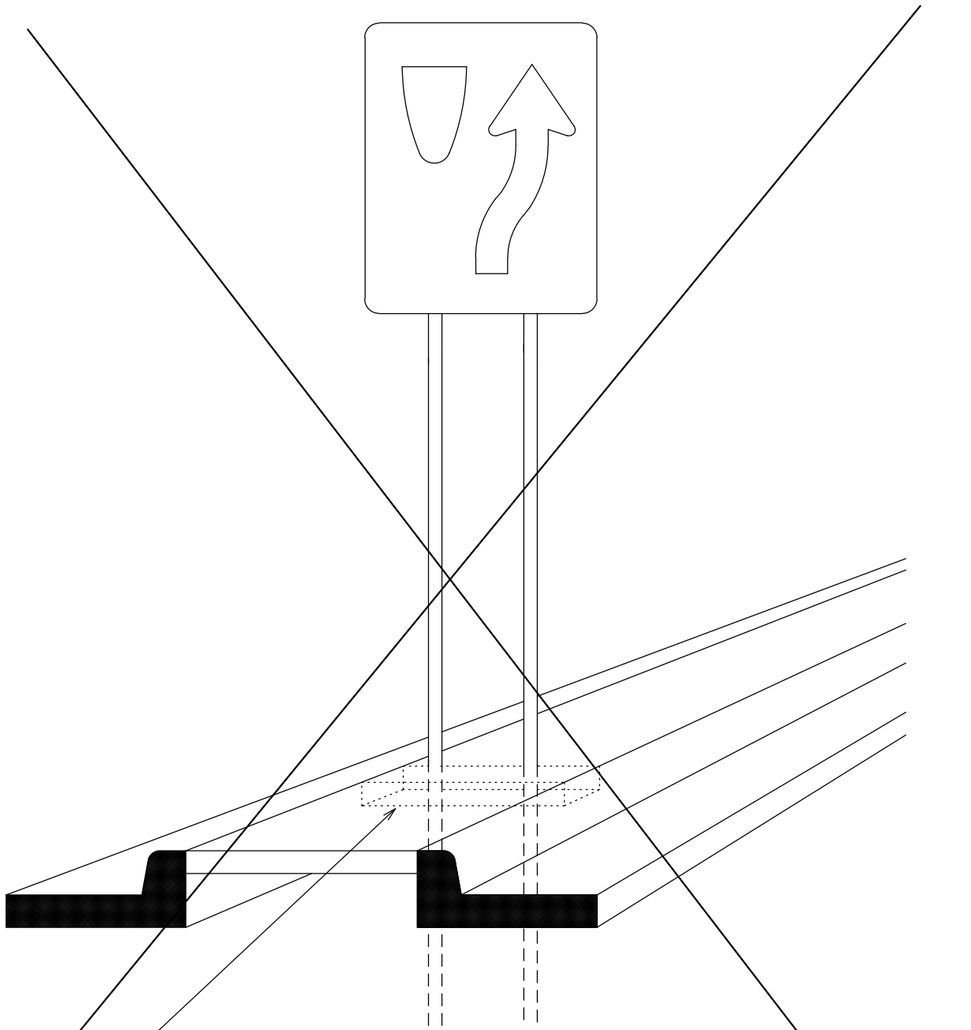
TYPE C & D SIGN
STRUCTURAL DETAILS

Sheet 2 of 2

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1/29/2019

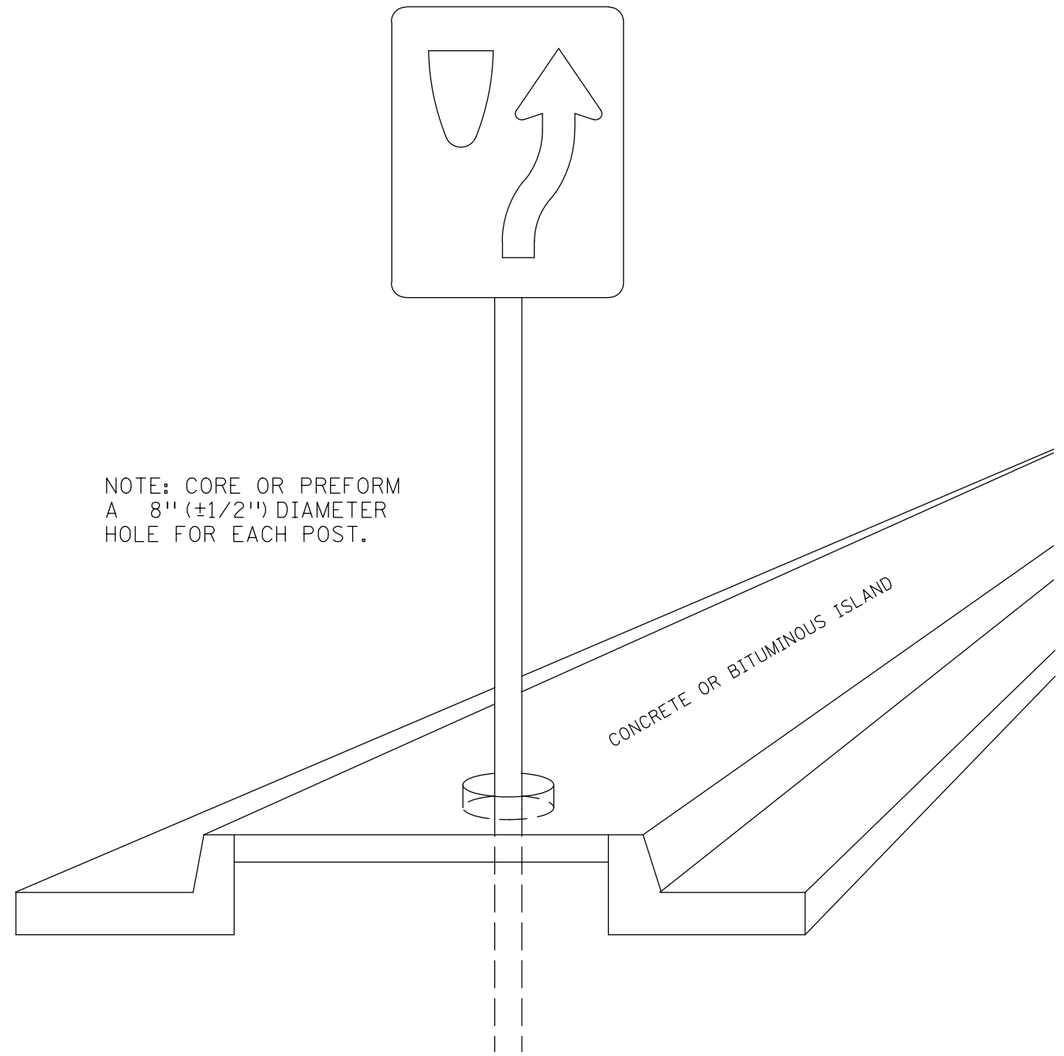
REVISED: 5-5-2017

STATE PROJ. NO. S.P. 4704-89 **SHEET NO.** 180 **OF** 239 **SHEETS**



NOTE:
-ALL MATERIALS AND WORK ASSOCIATED WITH FURNISHING AND INSTALLING
 HIGH DENSITY RIGID FOAM BLOCKS FOR SIGN POST INSERTS ARE CONSIDERED INCIDENTAL.
-FOAM BLOCK DIMENSIONS; THICKNESS = CONCRETE DEPTH, WIDTH = 12 INCHES,
 LENGTH = SIGN LENGTH PLUS 12 INCHES.
-POSITION AND STAKE THE FOAM BLOCK TO PROPER SIGN ALIGNMENT,
 FINISH AND JOINT THE CONRETE AS NEEDED TO PROVIDE A SURFACE
 PROFILE THAT HAS THE FOAM BLOCK FLUSH TO THE FINAL CONCRETE.
-LEAVE THE HIGH DENSITY RIGID FOAM BLOCK INPLACE.
-CONTACT THE DISTRICT SIGNSHOP FOR SIGN LOCATION ASSISTANCE.

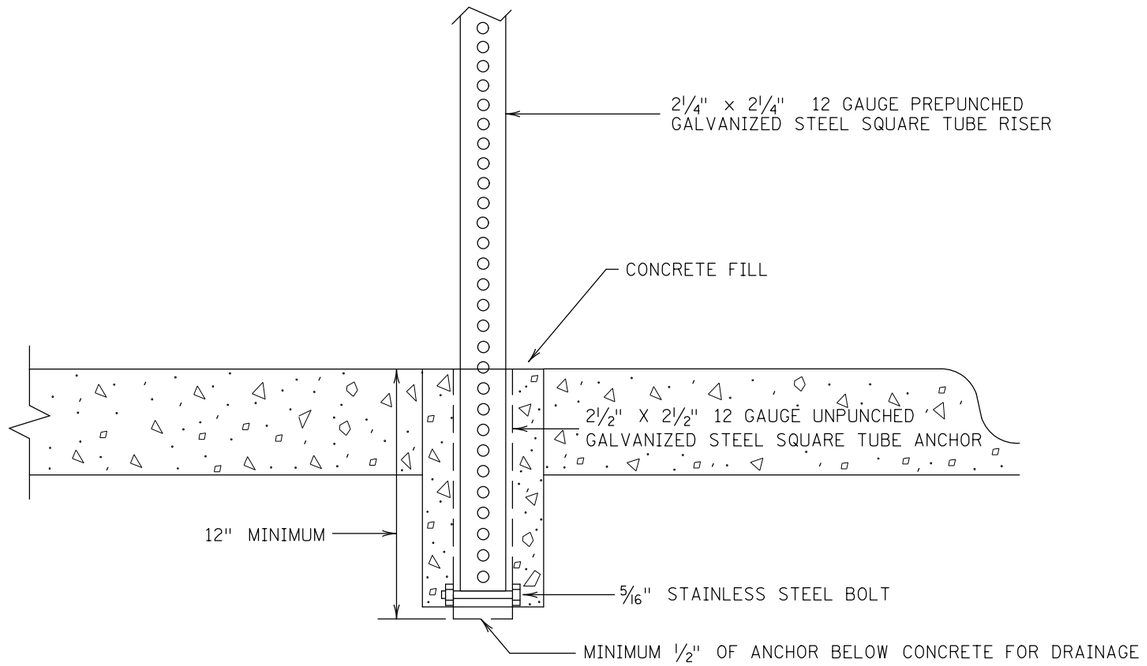
NOTE: CORE OR PREFORM
A 8" (±1/2") DIAMETER
HOLE FOR EACH POST.



FLANGED U-CHANNEL POST MOUNTED THROUGH CONCRETE MEDIAN OR SIDEWALK

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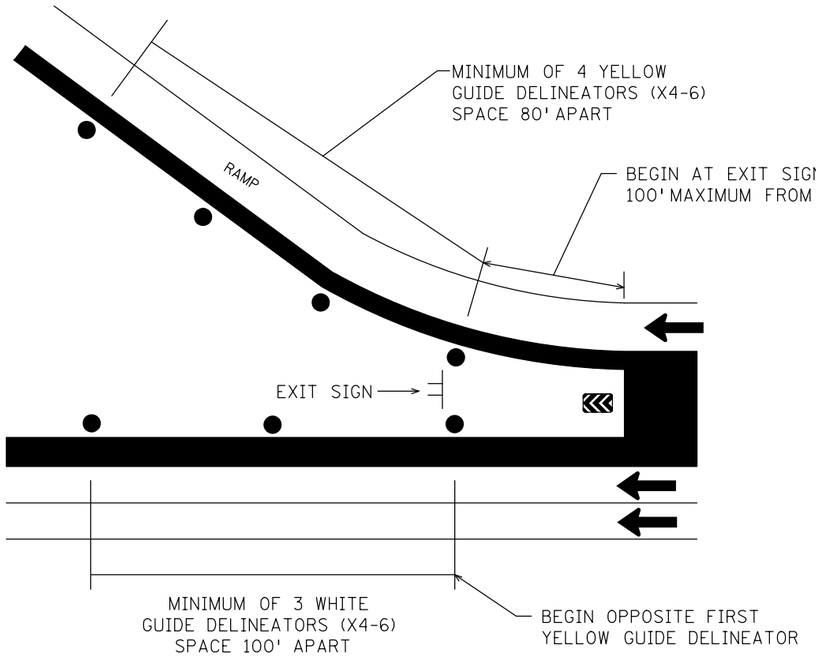
REVISED: 5-28-2015



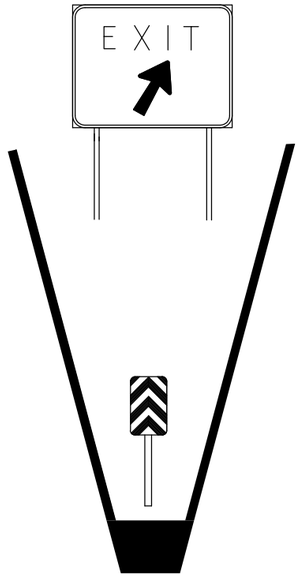
NOTES;

1. DRILL AN 8" DIAMETER HOLE THE FULL DEPTH OF THE ANCHOR.
2. DRILL 3/8" HOLES ON OPPOSITE SIDES OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR APPROX. 1" FROM THE BOTTOM OF THE ANCHOR. INSERT A 5/16" STAINLESS STEEL BOLT THROUGH THE HOLES AND SECURE WITH A STAINLESS STEEL LOCK NUT WITH NYLON INSERT. THE PREPUNCHED GALVANIZED STEEL SQUARE TUBE RISER (TO BE INSERTED INSIDE THE UNPUNCHED GALVANIZED SQUARE TUBE ANCHOR) WILL REST ON BOLT.
3. INSERT THE ANCHOR IN THE HOLE.
4. AFTER INSTALLATION OF THE UNPUNCHED GALVANIZED STEEL SQUARE TUBE ANCHOR, FILL THE HOLE WITH A CONCRETE MIX APPROVED BY THE ENGINEER AND LEVEL OFF THE TOP OF CONCRETE.
5. MAXIMUM SIGN PANEL SIZE IS 42" WIDE X 48" HIGH.
6. SIGN PANEL TO BE MOUNTED 7 FT ABOVE THE GROUND.

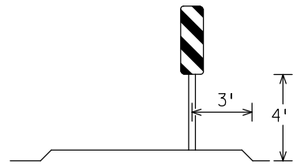
TYPE C SIGNS, DELINEATORS & MARKERS IN CONCRETE



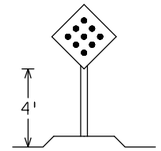
PLAN A
RAMP DELINEATION



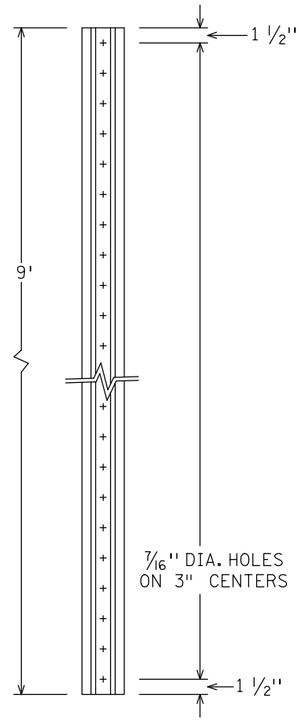
TYPE 3 OBJECT MARKER
12" X 24" (X4-4C)



RAISED ISLAND
TYPE 3 OBJECT MARKER
(X4-4)

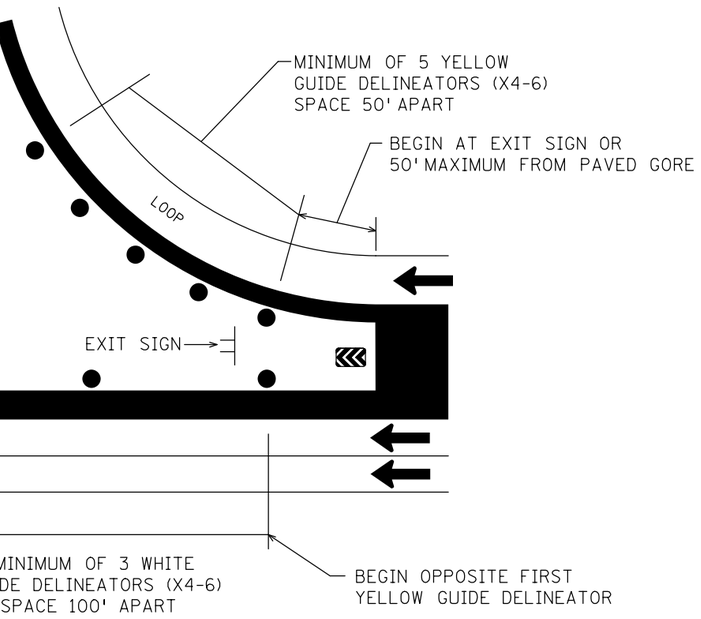


RAISED ISLAND
TYPE 2 OBJECT MARKER
(X4-2)

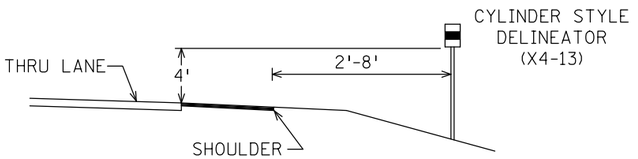


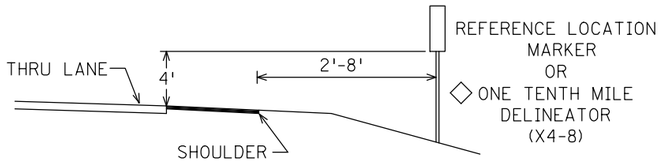
MNDOT 3401
NORMAL WEIGHT= 3 LB./FT.

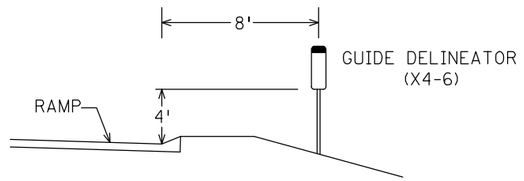
DELINEATOR POST



PLAN B
LOOP DELINEATION







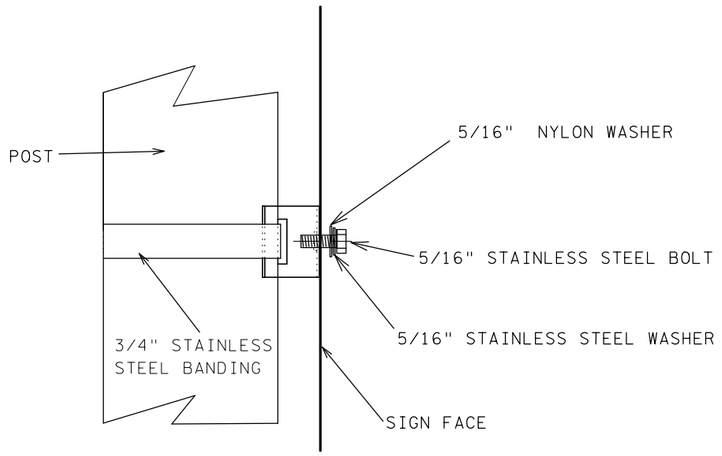
TYPICAL PLACEMENT

DELINEATORS AND MARKERS

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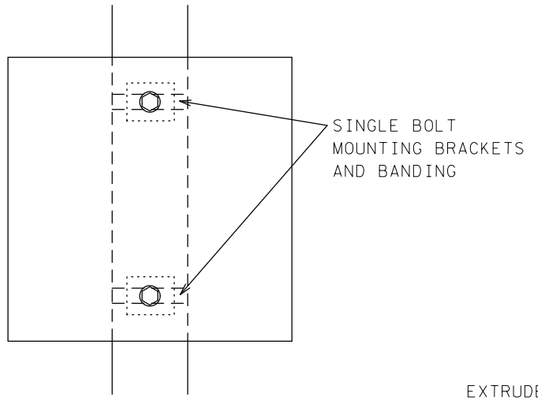
REVISED: 10-2-2013

SINGLE BOLT MOUNTING BRACKET
AND BANDING DETAILS

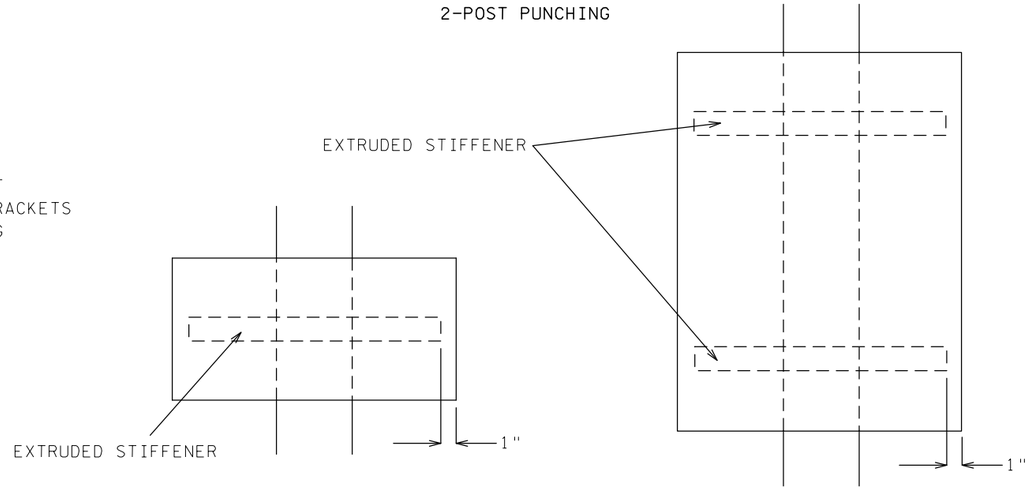


STIFFENER MOUNTING DETAILS

SINGLE POST PUNCHING

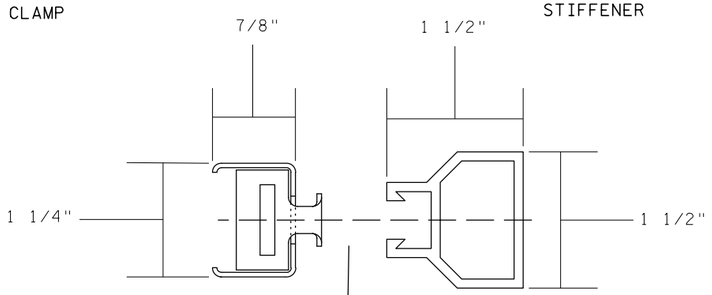


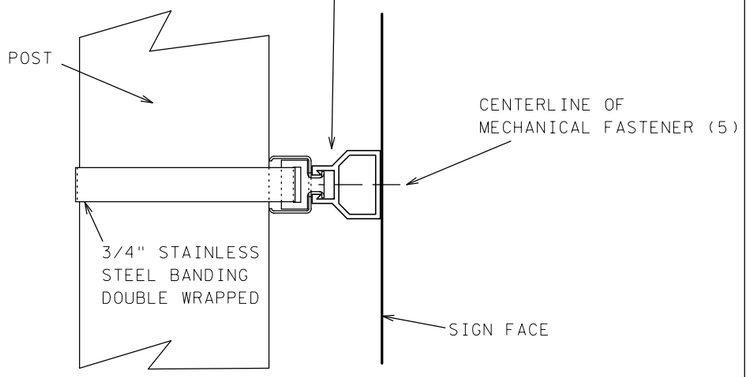
2-POST PUNCHING



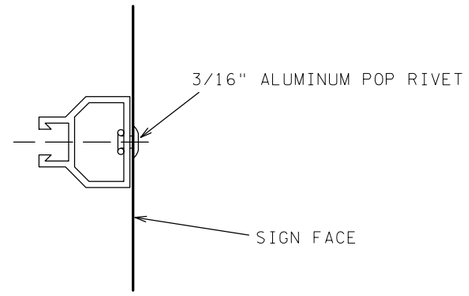
UNIVERSAL CHANNEL
CLAMP

LARGE EXTRUSION
STIFFENER

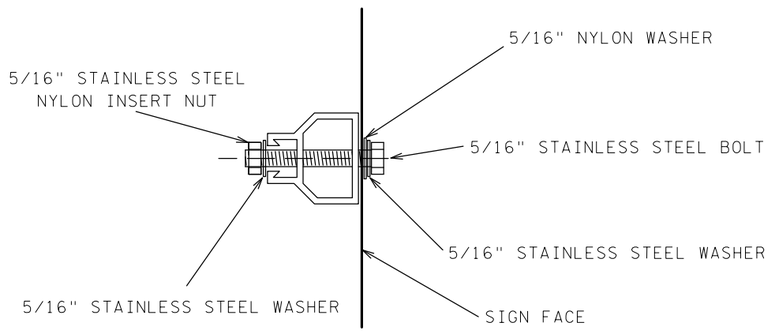




SUPPLEMENTAL POP RIVET ATTACHMENT



SUPPLEMENTAL BOLT ATTACHMENT



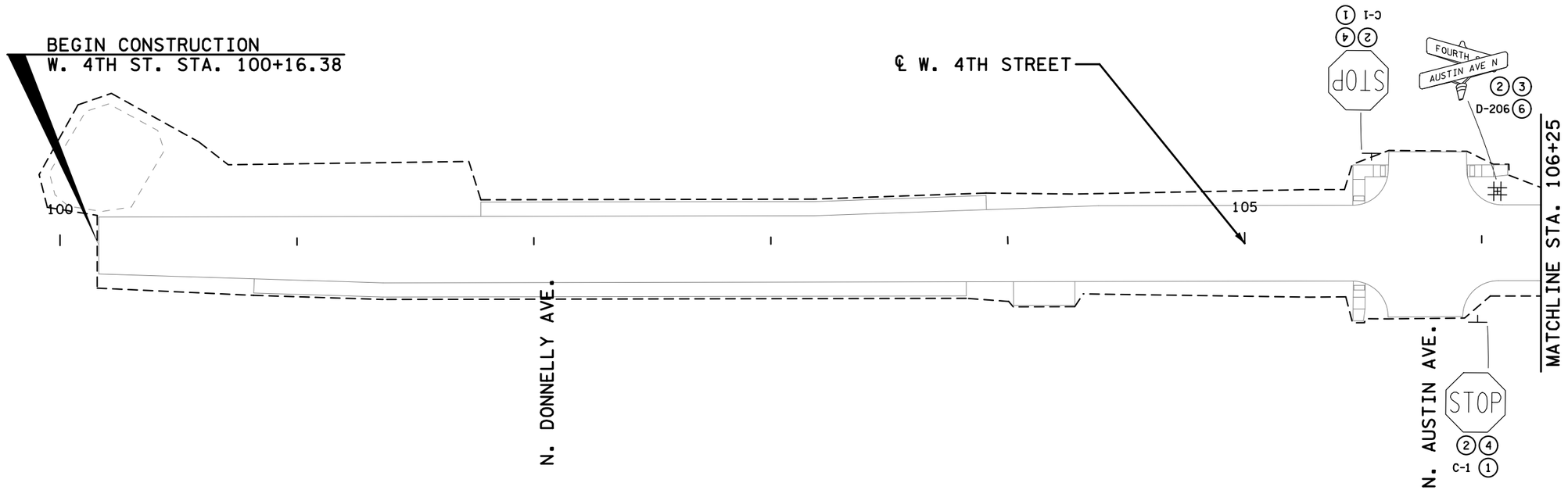
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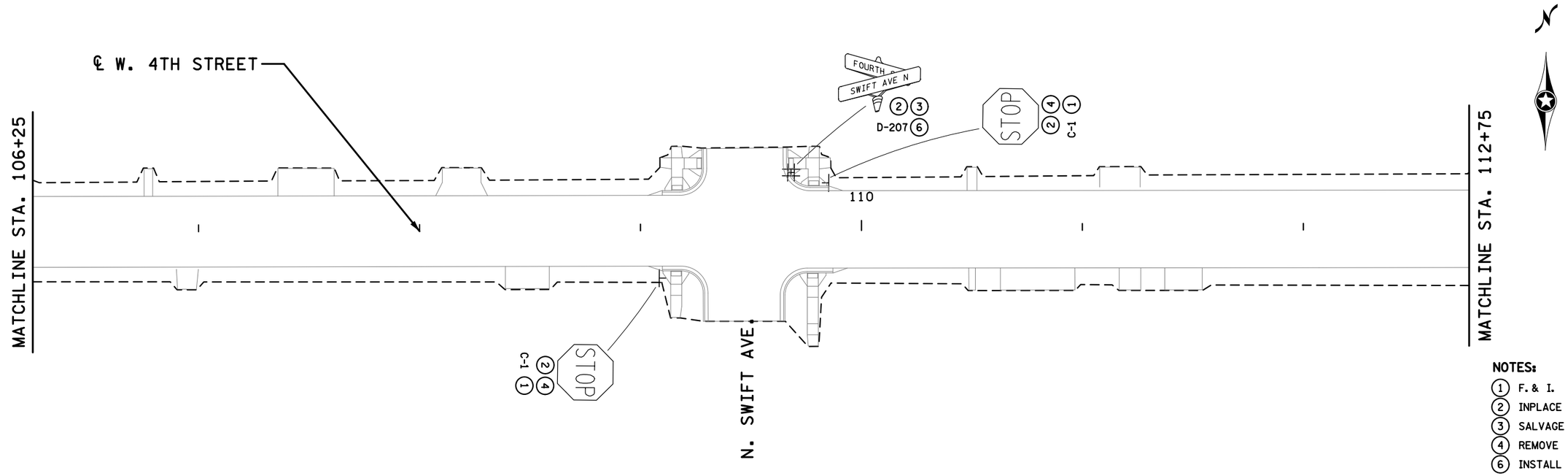
1. FOR DETAILS AND NOTES NOT SHOWN, SEE TYPE "C" AND "D" SIGN DETAILS.
2. FOR BACK TO BACK INSTALLATION, ROTATE STIFFENERS FOR ONE PANEL 180 DEGREES SUCH THAT PANELS CAN BE MOUNTED AT THE SAME ELEVATION.
3. HORIZONTAL SPACING OF STIFFENERS SHALL BE ACCORDING TO THE PUNCH CODES AS SHOWN IN THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL.
4. MOUNTING HOLES ARE NOT REQUIRED ON SIGNS SMALLER THAN 6.3 SQUARE FEET, EXCEPT ON SINGLE POST PUNCHED SIGNS.
5. STIFFENERS SHALL BE ATTACHED TO SIGNS USING EITHER 3/16" DIAMETER POP-RIVETS OR 5/16" DIAMETER BOLTS.
6. USE .75" X .030" BANDING STRAPS OF TYPE 201 "1/4 HARD" STAINLESS STEEL, DOUBLE-WRAPPED AROUND THE POLE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
7. BAND PRETENSION SHALL NOT EXCEED 1300 POUNDS.
8. ALL HARDWARE SHALL BE COMPATIBLE WITH STIFFENER AND MOUNTING SYSTEMS.

SIGN TYPE C AND D EXTRUDED ALUMINUM MOUNTING SYSTEM FOR ROUND SUPPORTS

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1/29/2019

REVISED: 1-25-2016





SIGNING LAYOUT

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0 25 50
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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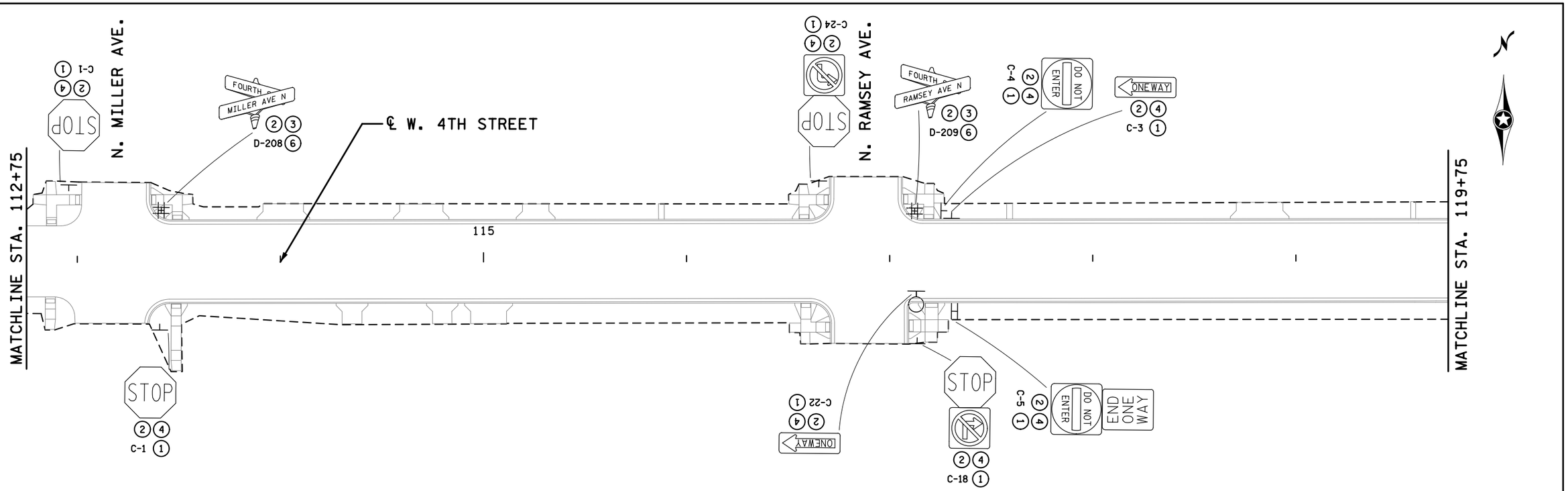
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

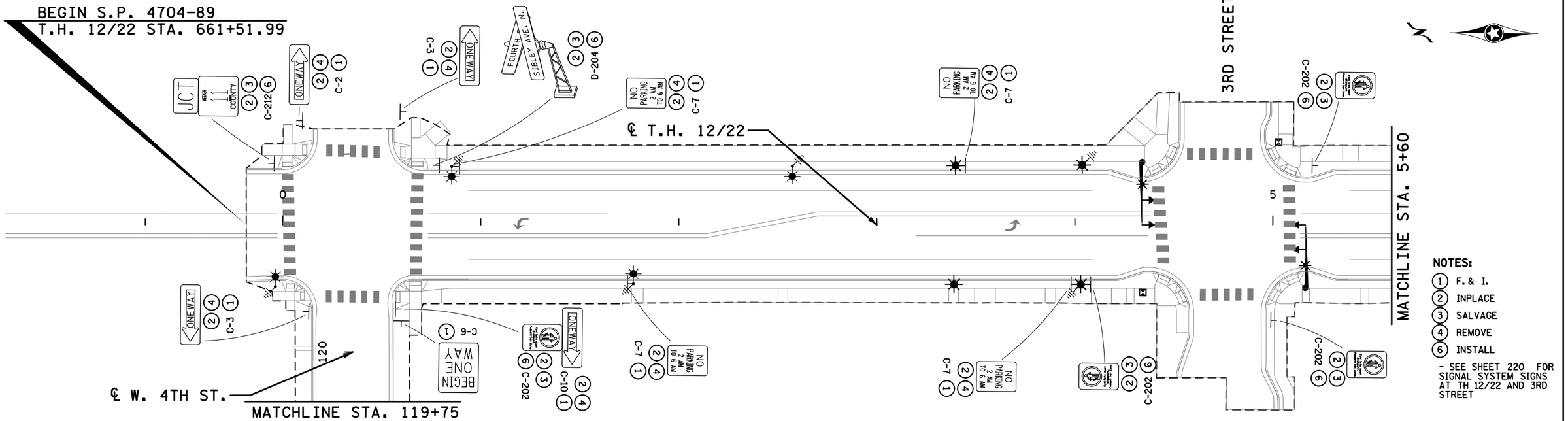
VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

DESIGNED	GNG
DRAWN	SFH
CHECKED	VES

S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNING PLAN

SHEET 184 OF 239





NOTES:
1. F. & I.
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL

- SEE SHEET 220 FOR SIGNAL SYSTEM SIGNS AT TH 12/22 AND 3RD STREET

SIGNING LAYOUT

1/29/2019 1:57:55 PM

SCALE 0 25 50 FEET

cd470489_sgn003-004.dgn

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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REV.	BY	DATE

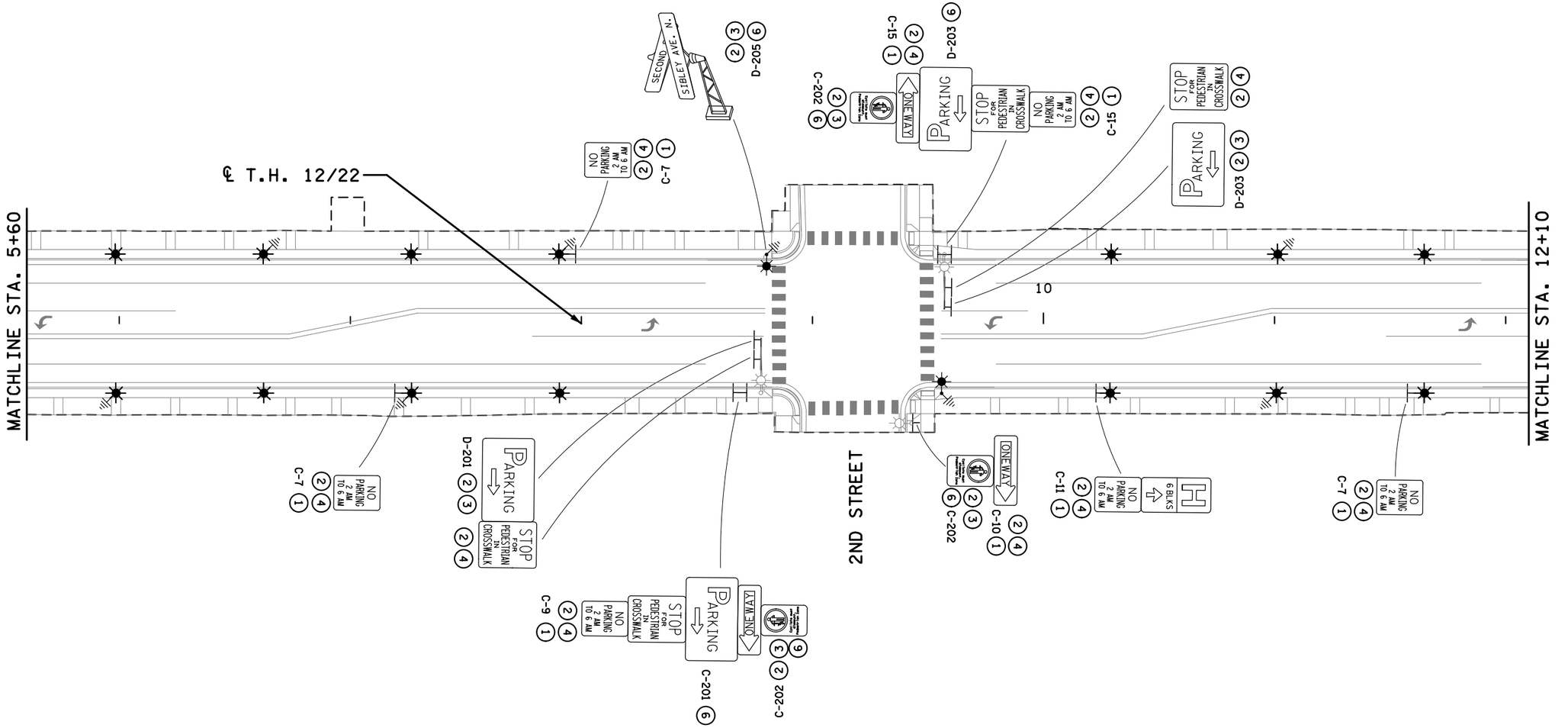
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VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

DESIGNED	GNG
DRAWN	SFH
CHECKED	VES

S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNING PLAN

SHEET 185 OF 239



NOTES:

1. F. & I.
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL

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0 25 50
SCALE FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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LIC. NO. 41417 DATE 11-15-2018

DESIGNED GNG
DRAWN SFH
CHECKED VES

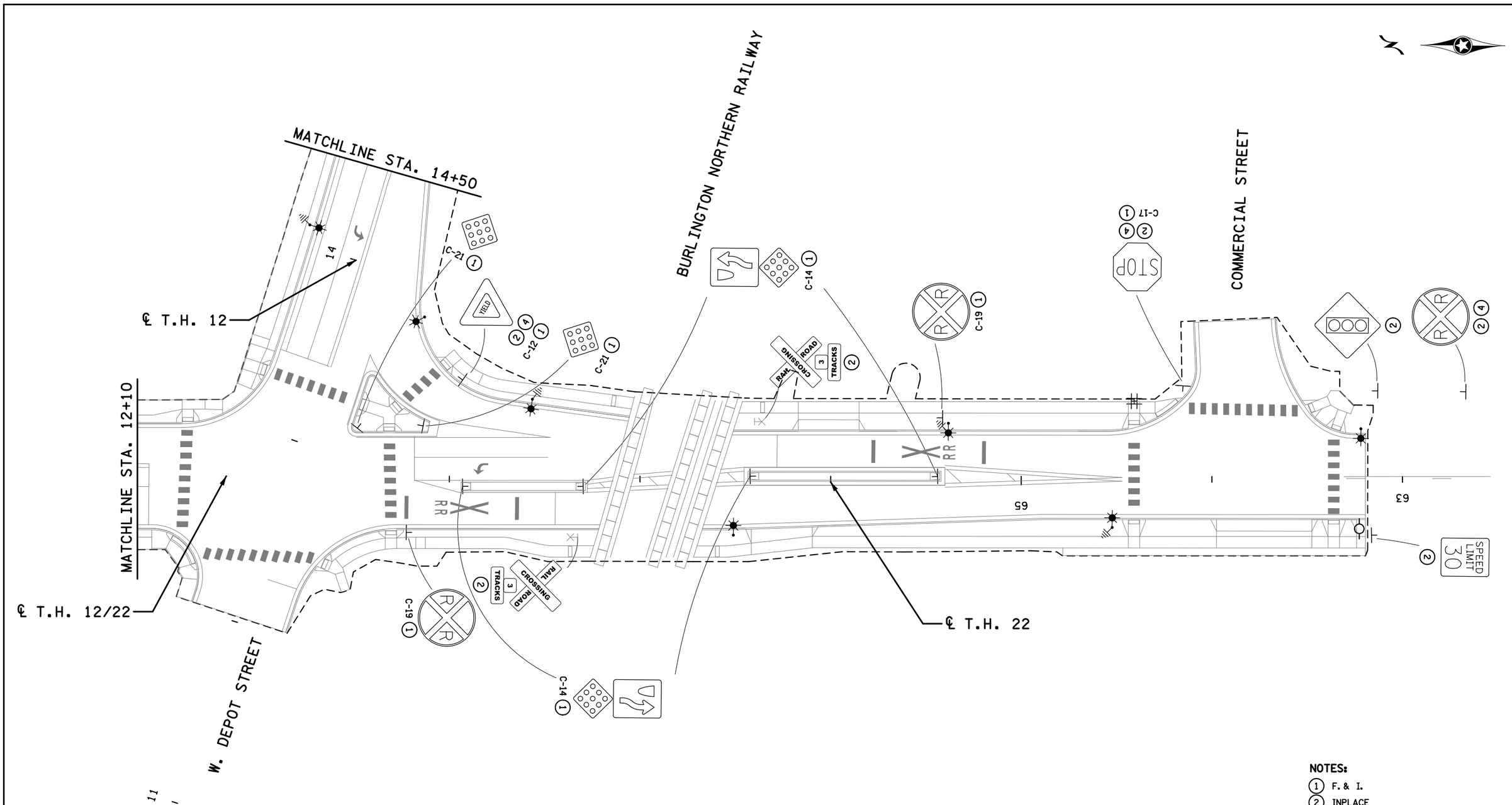
SIGNING LAYOUT

S.P. 4704-89

T.H. 12/22 RECONSTRUCTION

SIGNING PLAN

SHEET 186 OF 239



NOTES:

(1) F. & I.
(2) INPLACE
(4) REMOVE

- SEE SHEET 210 FOR SIGNAL SYSTEM SIGNS AT TH 12/22 AND DEPOT ST

SIGNING LAYOUT

1/29/2019 1:57:57 PM

0 25 50
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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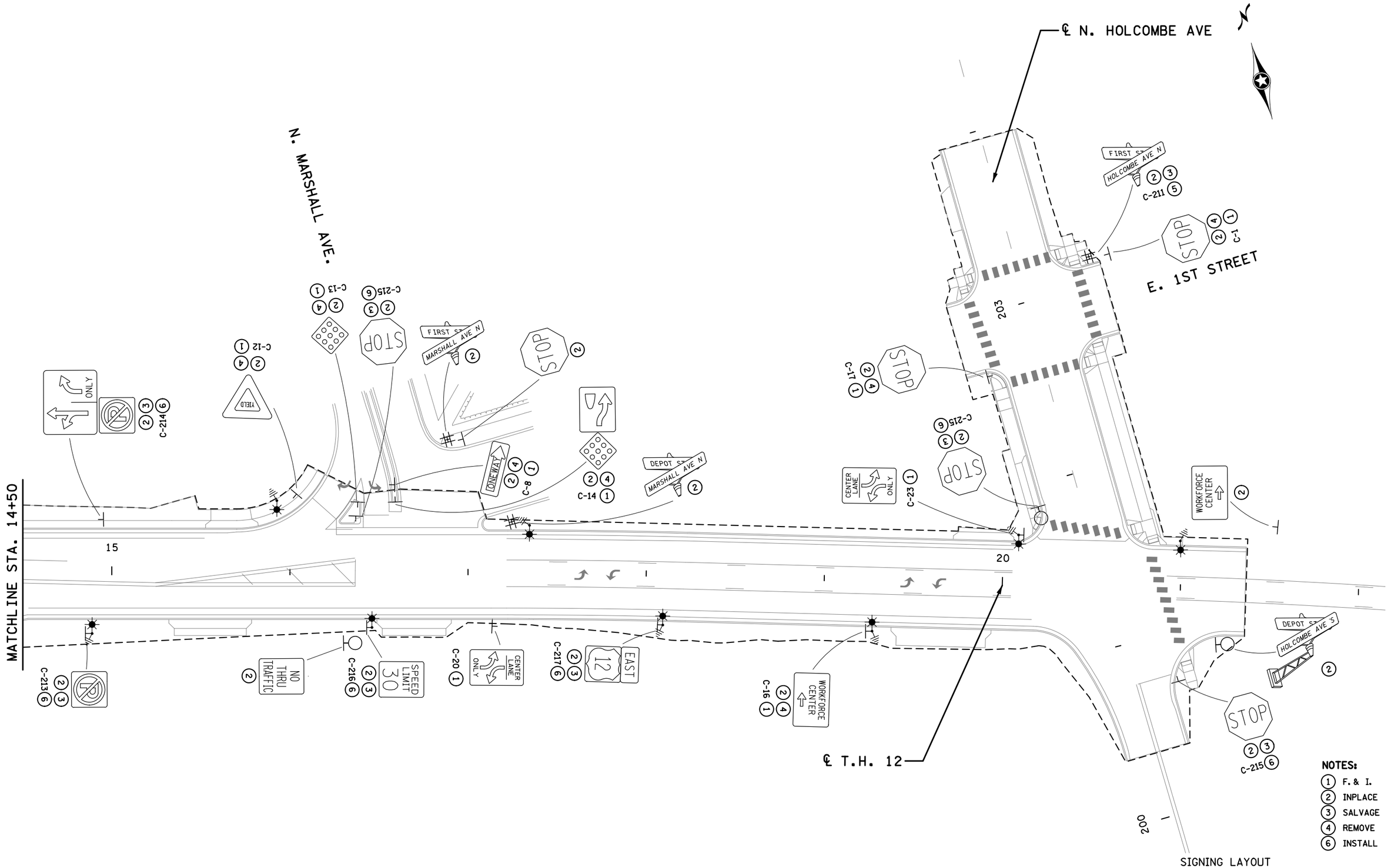
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VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

DESIGNED	DRAWN	CHECKED
GNG	SFH	VES

S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNING PLAN

SHEET 187 OF 239



NOTES:

1. F. & I.
2. INPLACE
3. SALVAGE
4. REMOVE
6. INSTALL

SIGNING LAYOUT

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0 25 50
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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REV.	BY	DATE

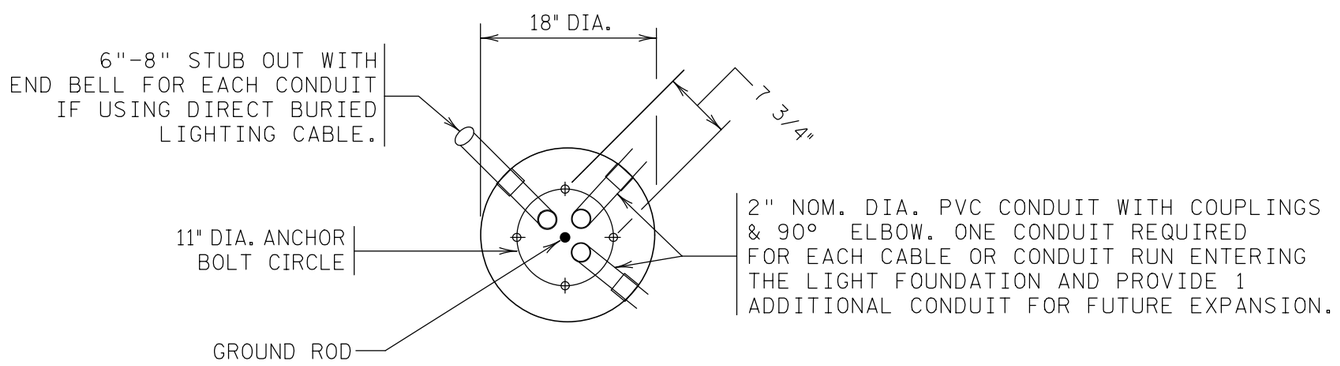
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LIC. NO. 41417 DATE 11-15-2018

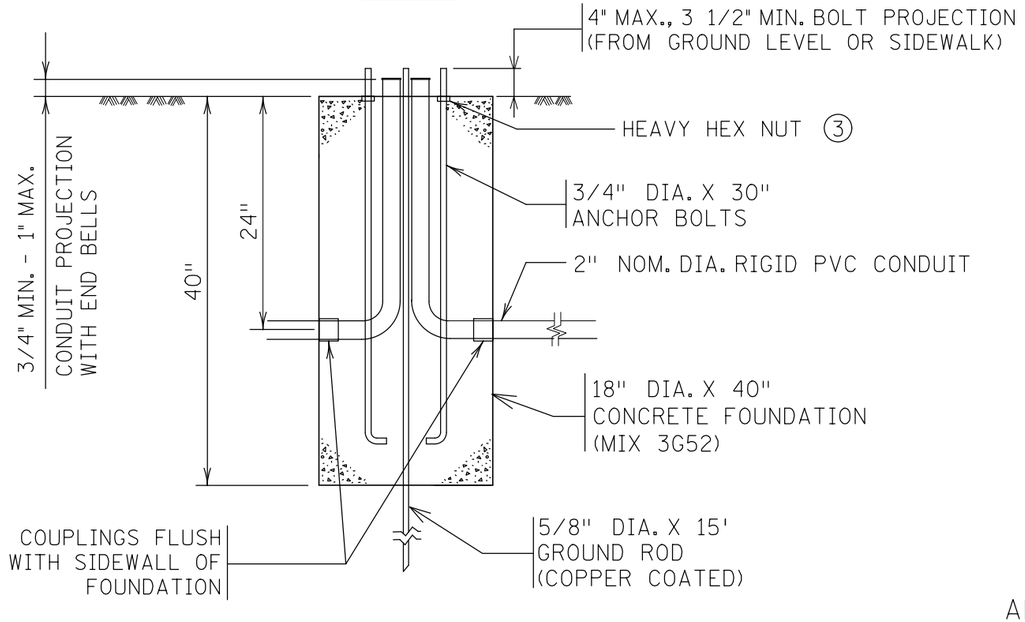
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DRAWN	SFH
CHECKED	VES

S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNING PLAN

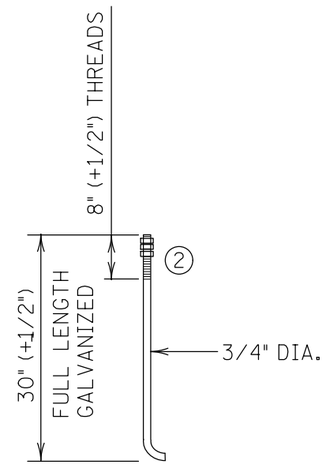
SHEET 188 OF 239



PLAN

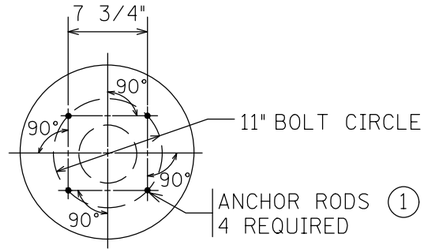


ELEVATION



ANCHOR ROD DETAIL

(SPEC. 3385 TYPE B)



ANCHOR ROD PLACEMENT

LIGHT FOUNDATION DESIGN P

STANDARD PLATES	
PLATE NO.	DESCRIPTION
8127E	LIGHT FOUNDATION DESIGN E
8129A	SHIM AND WASHER

NOTES:

USE CONCRETE MIX 3G52.

CONSTRUCT FOUNDATIONS IN ACCORDANCE WITH 2545.

EXCAVATE AND BACKFILL IN ACCORDANCE WITH 2451 & 2565.

WRAP AT LEAST 2 IN OF ANCHOR ROD THREADS DIRECTLY BELOW THE EMBEDDED IN CONCRETE HEAVY HEX WITH 3 LAYERS OF VINYL ELECTRIC TAPE.

PROTECT THE ANCHOR ROD THREADS ABOVE THE FOUNDATION TO AVOID CONTAMINATION DURING CONCRETE POURING.

(1) PLACE ANCHOR RODS AT RIGHT ANGLES TO THE DIRECTION OF THE MAST ARM.

(2) PROVIDE HARDWARE REQUIRED BY THE POLE MANUFACTURER, IN ACCORDANCE WITH 2545 AND AS SHOWN IN THE PLAN.

(3) PLACE A HEAVY HEX NUT EMBEDDED IN CONCRETE FLUSH WITH THE TOP OF THE FOUNDATION ON EACH ANCHOR ROD.

LIGHTING TABULATION (F)	Q
PROJECT	2545
	LIGHTING SYSTEM
	LUMP SUM
S.P. 4704-89 / S.A.P. 135-010-008 (T.H. 12/22)	
S.P. 4705-47 / S.A.P. 135-010-008 (T.H. 12)	
S.P. 4709-32 / S.A.P. 135-010-009 (T.H. 22)	
TOTALS	1

(F) S.P. 4704-89 (23% / 6% STATE / 71% S.A.P. 135-010-008, S.P. 4705-47 (54% / 14% STATE / 32% S.A.P. 135-010-008, S.P. 4709-32 (62% / 16% STATE / 22% S.A.P. 135-010-009

LIGHTING DETAIL AND TABULATION

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1/29/2019

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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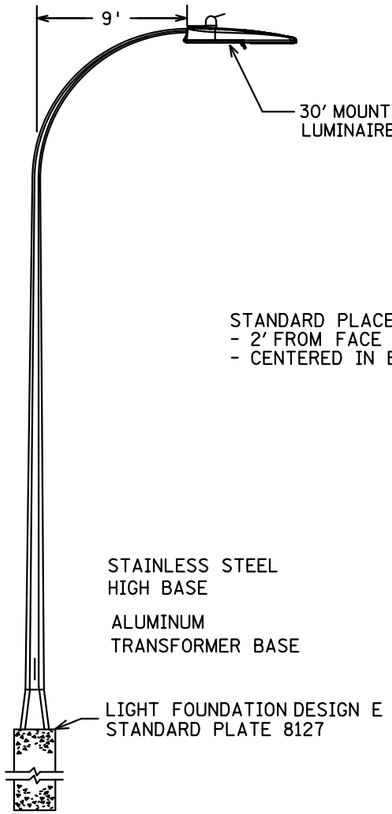
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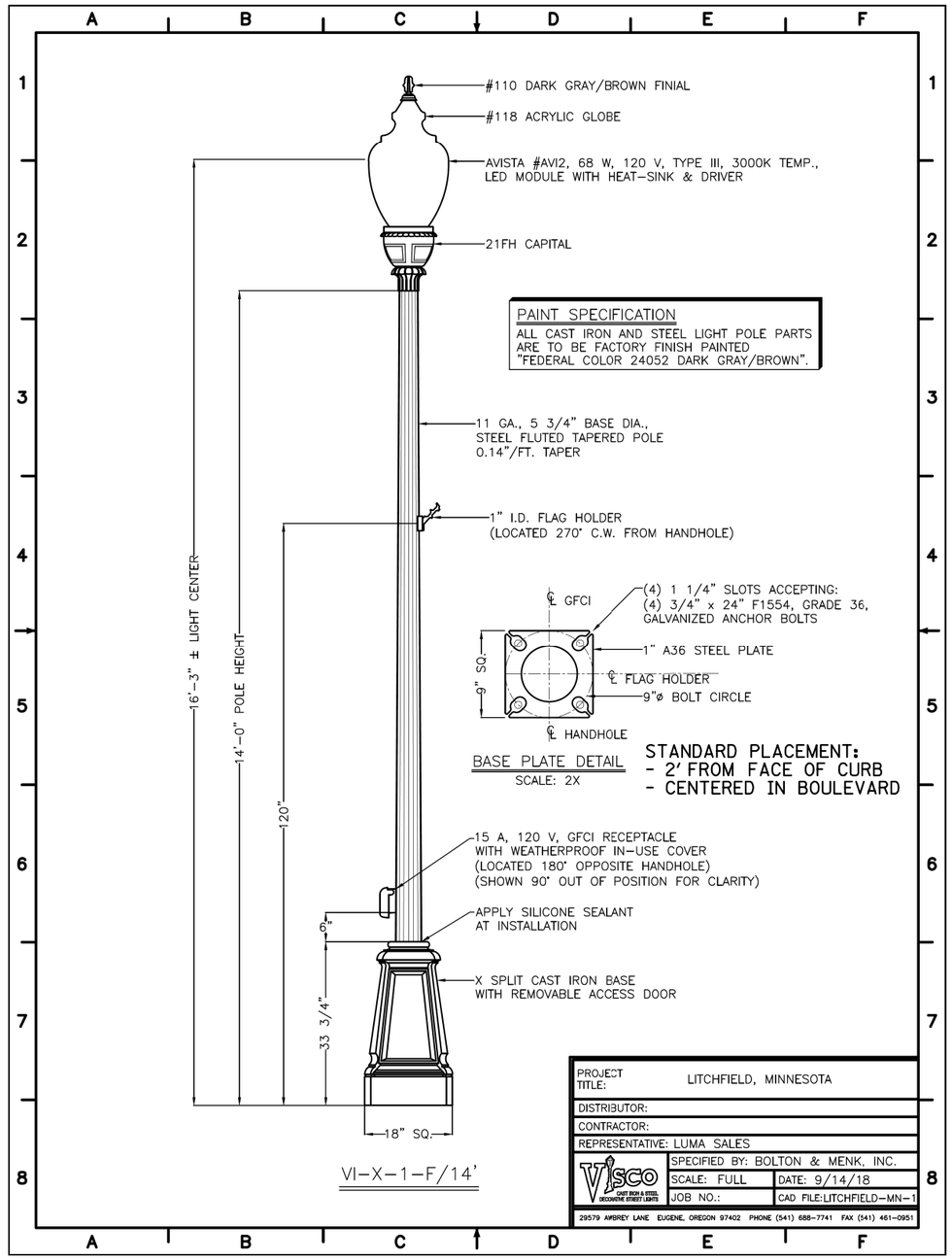
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DRAWN	CMK
CHECKED	VES

S.P. 4704-89
T.H. 12 / 22 RECONSTRUCTION
LIGHTING PLAN

SHEET 189 OF 239



LIGHTING UNIT TYPE 9-30



LIGHTING UNIT TYPE ACORN

LIGHTING DETAIL

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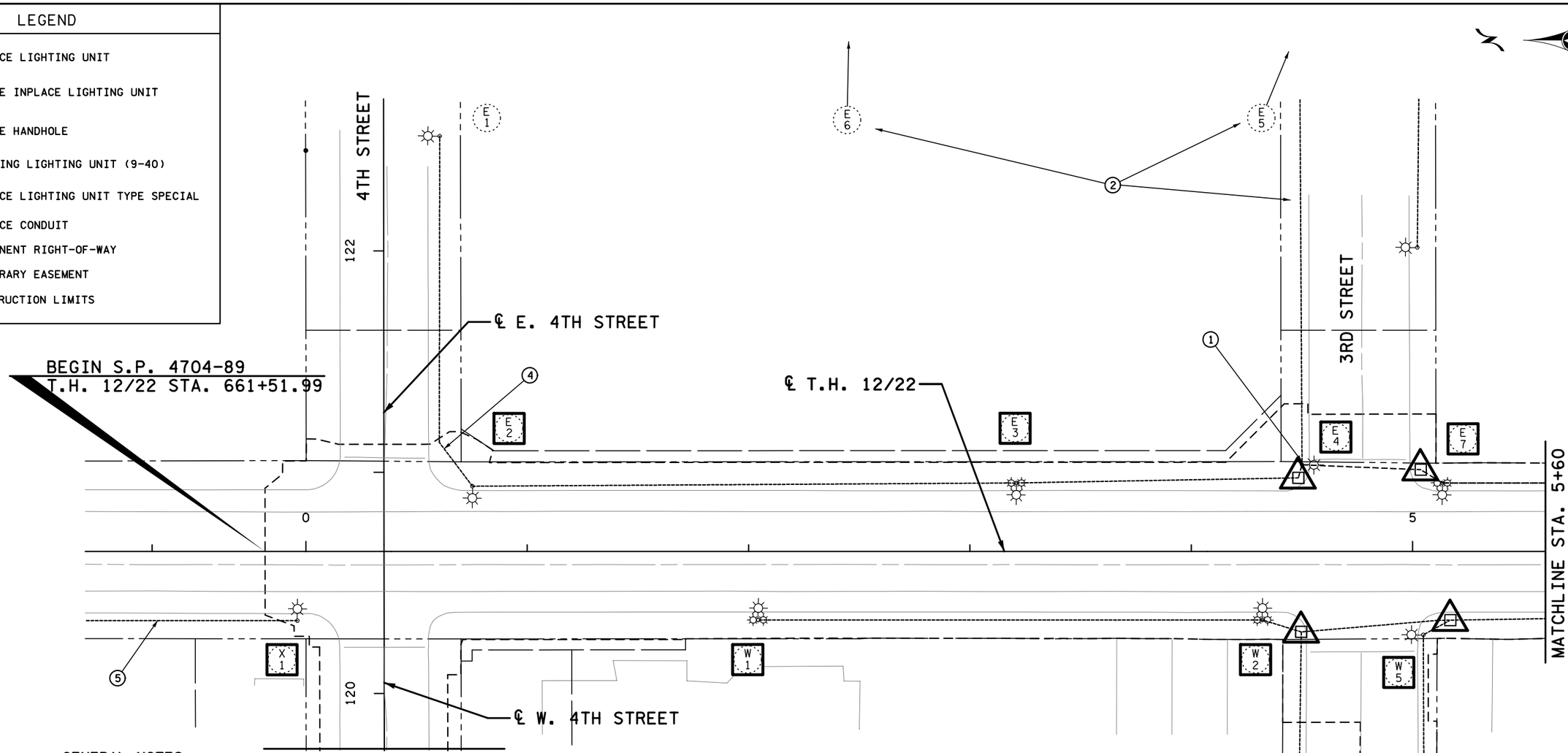
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CMK	GNG	VES

S.P. 4704-89
T.H. 12 / 22 RECONSTRUCTION
LIGHTING PLAN

SHEET 190 OF 239

LEGEND

- INPLACE LIGHTING UNIT
- REMOVE INPLACE LIGHTING UNIT
- REMOVE HANDHOLE
- EXISTING LIGHTING UNIT (9-40)
- INPLACE LIGHTING UNIT TYPE SPECIAL
- INPLACE CONDUIT
- PERMANENT RIGHT-OF-WAY
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS



GENERAL NOTES:

-ALL INPLACE WIRING AND CONDUIT WITHIN RIGHT OF WAY OR CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS OTHERWISE NOTED
-REMOVAL OF INPLACE WIRING AND CONDUIT SHALL BE INCIDENTAL

SPECIFIC NOTES:

1. CUT WIRE AND CONDUIT AT CONSTRUCTION LIMITS
2. EXISTING CONDUIT AND WIRING CONTINUES EAST ALONG THIRD STREET TO MARSHALL AVE INTERSECTION AND CONTINUES NORTH TO LIGHTING UNIT E6 WHICH IS LOCATED 200 FT NORTH OF THE NW CORNER OF 3RD AND MARSHALL INTERSECTION
3. DO NOT REMOVE CONDUIT AND WIRING BETWEEN LIGHTING UNITS W3 AND W4
4. CUT WIRE AND CONDUIT AT THE CONSTRUCTION LIMITS AND DO NOT REMOVE CONDUIT AND WIRING FROM THERE TO LIGHTING UNIT E1
5. DO NOT REMOVE ANY CONDUIT OR WIRING FROM LIGHTING UNIT X1 GOING NORTH
6. REMOVE CONDUIT AND WIRING UP TO THE POWER POLE SHOWN
7. REMOVE OVER HEAD POWER FROM EXISTING LIGHT POLE TO POWER POLE
8. INPLACE LIGHT NOT SHOWN, AT NORTHEAST CORNER OF WEST 3RD STREET AND NORTH RAMSEY AVENUE

INPLACE LIGHTING REMOVAL LAYOUT

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SCALE FEET

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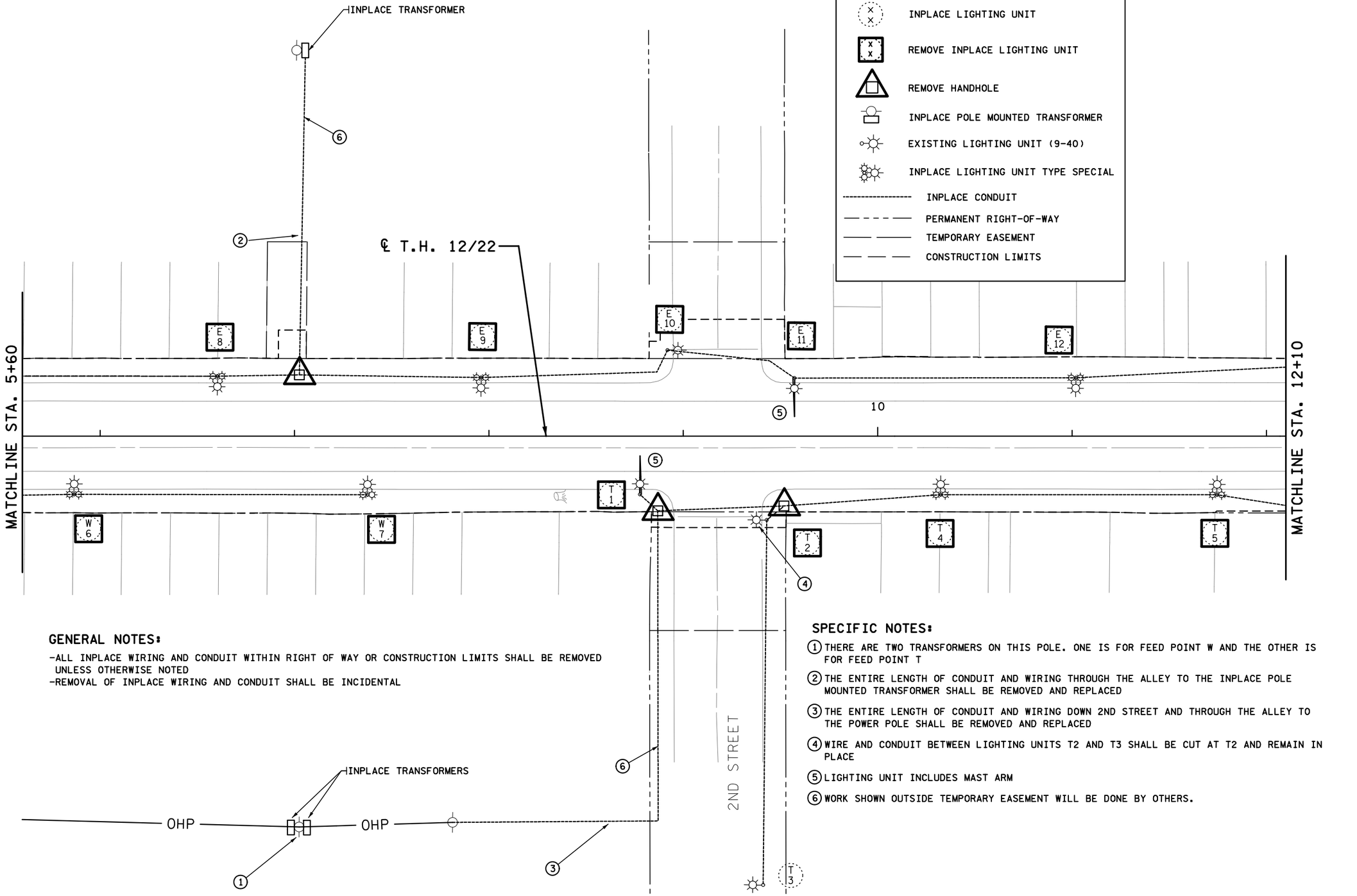
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S.P. 4704-89
T.H. 12 / 22 RECONSTRUCTION
LIGHTING PLAN

SHEET 191 OF 239



GENERAL NOTES:

- ALL INPLACE WIRING AND CONDUIT WITHIN RIGHT OF WAY OR CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS OTHERWISE NOTED
- REMOVAL OF INPLACE WIRING AND CONDUIT SHALL BE INCIDENTAL

SPECIFIC NOTES:

1. THERE ARE TWO TRANSFORMERS ON THIS POLE. ONE IS FOR FEED POINT W AND THE OTHER IS FOR FEED POINT T
2. THE ENTIRE LENGTH OF CONDUIT AND WIRING THROUGH THE ALLEY TO THE INPLACE POLE MOUNTED TRANSFORMER SHALL BE REMOVED AND REPLACED
3. THE ENTIRE LENGTH OF CONDUIT AND WIRING DOWN 2ND STREET AND THROUGH THE ALLEY TO THE POWER POLE SHALL BE REMOVED AND REPLACED
4. WIRE AND CONDUIT BETWEEN LIGHTING UNITS T2 AND T3 SHALL BE CUT AT T2 AND REMAIN IN PLACE
5. LIGHTING UNIT INCLUDES MAST ARM
6. WORK SHOWN OUTSIDE TEMPORARY EASEMENT WILL BE DONE BY OTHERS.

INPLACE LIGHTING REMOVAL LAYOUT

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SCALE 0 25 50 FEET

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S.P. 4704-89
T.H. 12 / 22 RECONSTRUCTION
LIGHTING PLAN

SHEET 192 OF 239

MATCHLINE STA. 14+50

℄ T.H. 12

℄ T.H. 12/22

BURLINGTON NORTHERN RAILWAY

COMMERCIAL STREET

INPLACE TRANSFORMER

MATCHLINE STA. 12+10

W. DEPOT STREET

OHP

OHP

℄ T.H. 22

E 13

S 2

S 1

R 1

R 2

R 3

T 6

14

11

65

63

GENERAL NOTES:

-ALL INPLACE WIRING AND CONDUIT WITHIN RIGHT OF WAY OR CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS OTHERWISE NOTED
-REMOVAL OF INPLACE WIRING AND CONDUIT SHALL BE INCIDENTAL

SPECIFIC NOTES:

(1) REMOVE CONDUIT AND WIRING UP TO THE BASE OF EXISTING LIGHTING UNIT T6

(2) REMOVE UTILITY POLE (BY OTHERS)

(3) REMOVE OVERHEAD POWER (BY OTHERS)

(4) WORK SHOWN OUTSIDE TEMPORARY EASEMENT WILL BE DONE BY OTHERS.

LEGEND

- INPLACE LIGHTING UNIT
- REMOVE INPLACE LIGHTING UNIT
- INPLACE POLE MOUNTED TRANSFORMER
- EXISTING LIGHTING UNIT (9-40)
- INPLACE CONDUIT
- PERMANENT RIGHT-OF-WAY
- RAILROAD RIGHT OF WAY
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS

INPLACE LIGHTING REMOVAL LAYOUT

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1/29/2019

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SCALE FEET

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T.H. 12 / 22 RECONSTRUCTION
LIGHING PLAN

SHEET 193 OF 239

LEGEND

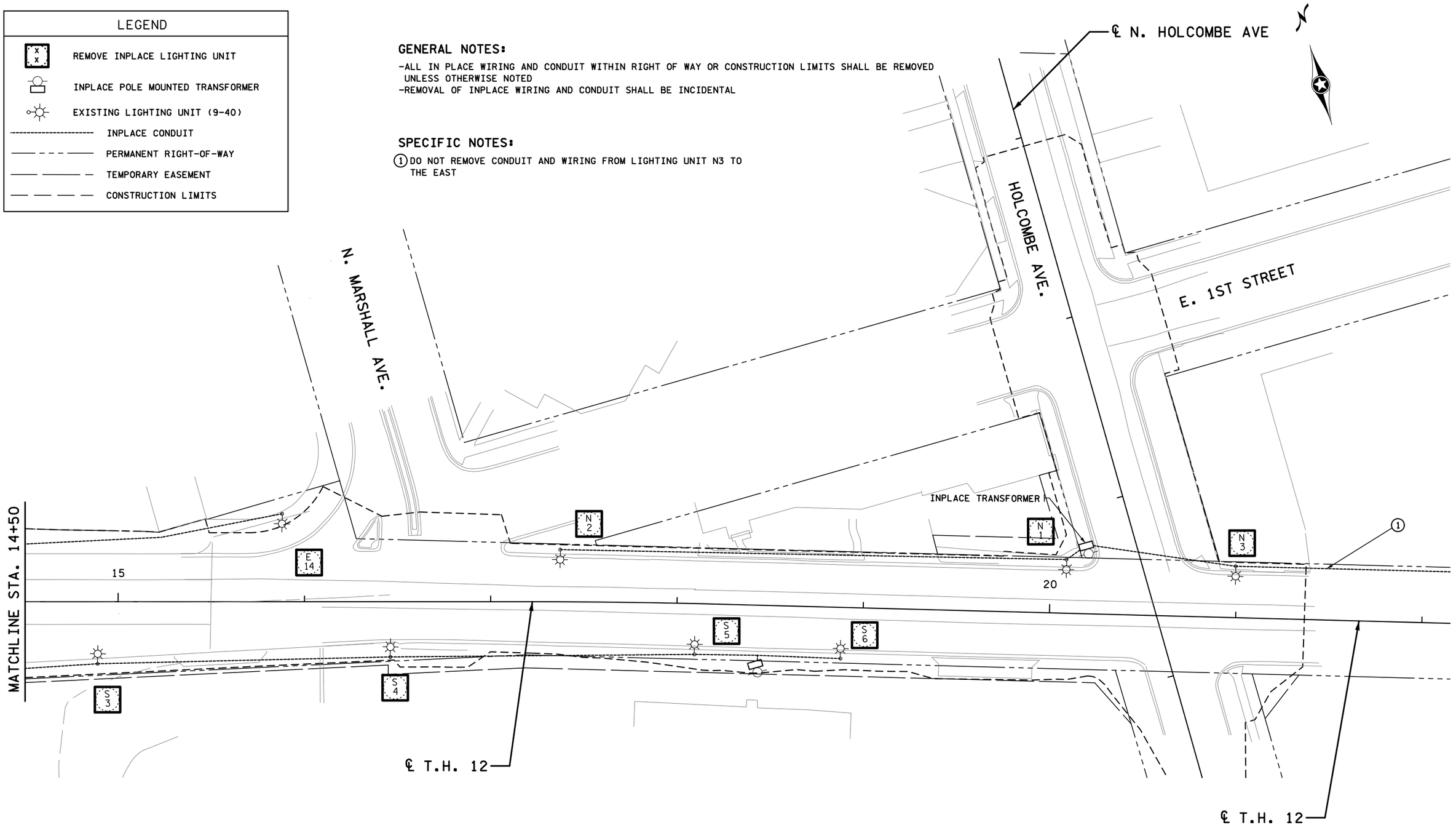
- REMOVE INPLACE LIGHTING UNIT
- INPLACE POLE MOUNTED TRANSFORMER
- EXISTING LIGHTING UNIT (9-40)
- INPLACE CONDUIT
- PERMANENT RIGHT-OF-WAY
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS

GENERAL NOTES:

-ALL IN PLACE WIRING AND CONDUIT WITHIN RIGHT OF WAY OR CONSTRUCTION LIMITS SHALL BE REMOVED UNLESS OTHERWISE NOTED
-REMOVAL OF INPLACE WIRING AND CONDUIT SHALL BE INCIDENTAL

SPECIFIC NOTES:

(1) DO NOT REMOVE CONDUIT AND WIRING FROM LIGHTING UNIT N3 TO THE EAST



INPLACE LIGHTING REMOVAL LAYOUT

0 25 50
SCALE FEET

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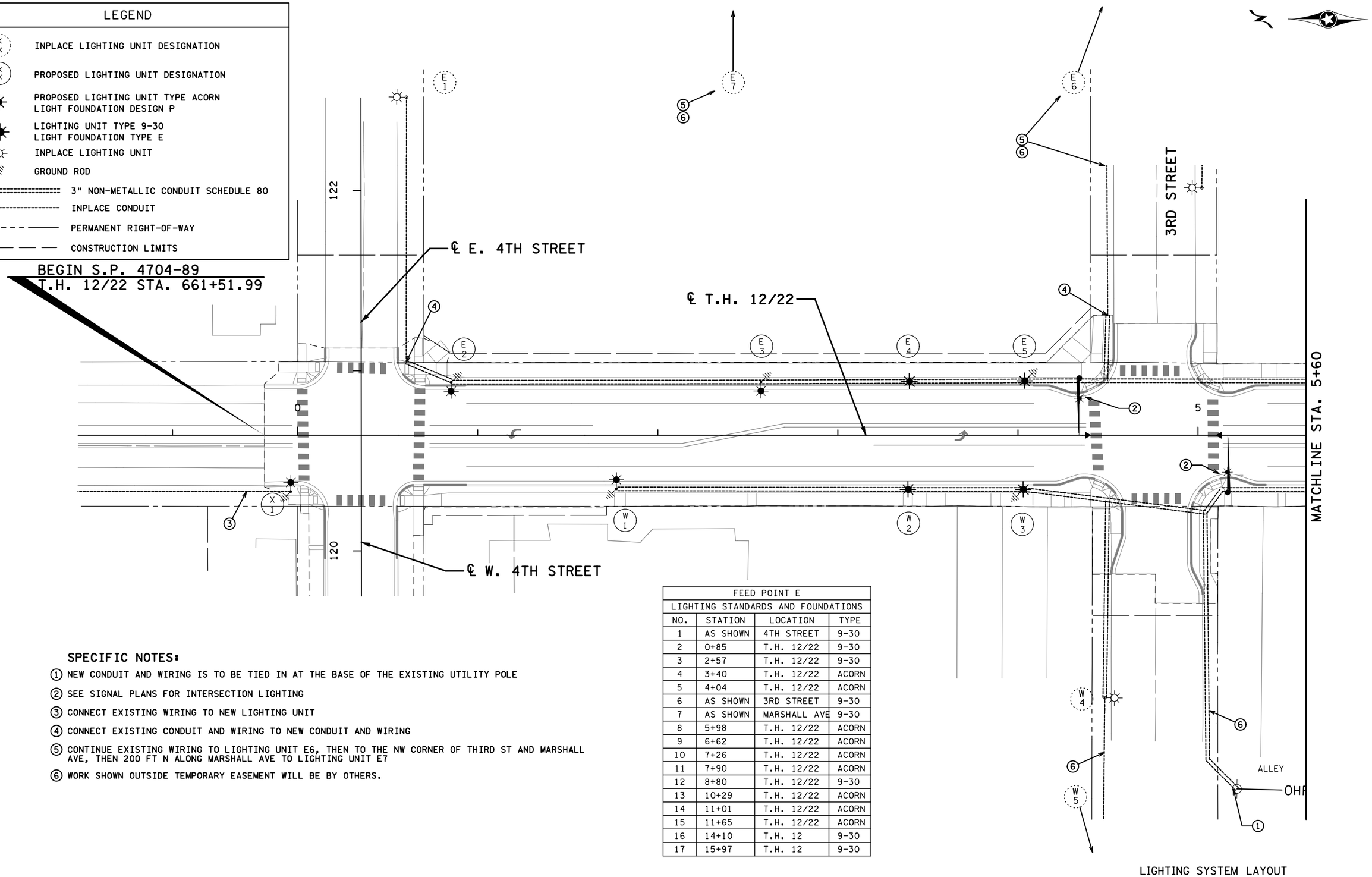
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T.H. 12 / 22 RECONSTRUCTION
LIGHTING PLAN

SHEET 194 OF 239

1/31/2019 4:19:17 PM

LEGEND

- INPLACE LIGHTING UNIT DESIGNATION
- PROPOSED LIGHTING UNIT DESIGNATION
- PROPOSED LIGHTING UNIT TYPE ACORN LIGHT FOUNDATION DESIGN P
- LIGHTING UNIT TYPE 9-30 LIGHT FOUNDATION TYPE E
- INPLACE LIGHTING UNIT
- GROUND ROD
- 3" NON-METALLIC CONDUIT SCHEDULE 80
- INPLACE CONDUIT
- PERMANENT RIGHT-OF-WAY
- CONSTRUCTION LIMITS



FEED POINT E			
LIGHTING STANDARDS AND FOUNDATIONS			
NO.	STATION	LOCATION	TYPE
1	AS SHOWN	4TH STREET	9-30
2	0+85	T.H. 12/22	9-30
3	2+57	T.H. 12/22	9-30
4	3+40	T.H. 12/22	ACORN
5	4+04	T.H. 12/22	ACORN
6	AS SHOWN	3RD STREET	9-30
7	AS SHOWN	MARSHALL AVE	9-30
8	5+98	T.H. 12/22	ACORN
9	6+62	T.H. 12/22	ACORN
10	7+26	T.H. 12/22	ACORN
11	7+90	T.H. 12/22	ACORN
12	8+80	T.H. 12/22	9-30
13	10+29	T.H. 12/22	ACORN
14	11+01	T.H. 12/22	ACORN
15	11+65	T.H. 12/22	ACORN
16	14+10	T.H. 12	9-30
17	15+97	T.H. 12	9-30

SPECIFIC NOTES:

1. NEW CONDUIT AND WIRING IS TO BE TIED IN AT THE BASE OF THE EXISTING UTILITY POLE
2. SEE SIGNAL PLANS FOR INTERSECTION LIGHTING
3. CONNECT EXISTING WIRING TO NEW LIGHTING UNIT
4. CONNECT EXISTING CONDUIT AND WIRING TO NEW CONDUIT AND WIRING
5. CONTINUE EXISTING WIRING TO LIGHTING UNIT E6, THEN TO THE NW CORNER OF THIRD ST AND MARSHALL AVE, THEN 200 FT N ALONG MARSHALL AVE TO LIGHTING UNIT E7
6. WORK SHOWN OUTSIDE TEMPORARY EASEMENT WILL BE BY OTHERS.

LIGHTING SYSTEM LAYOUT

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SCALE FEET

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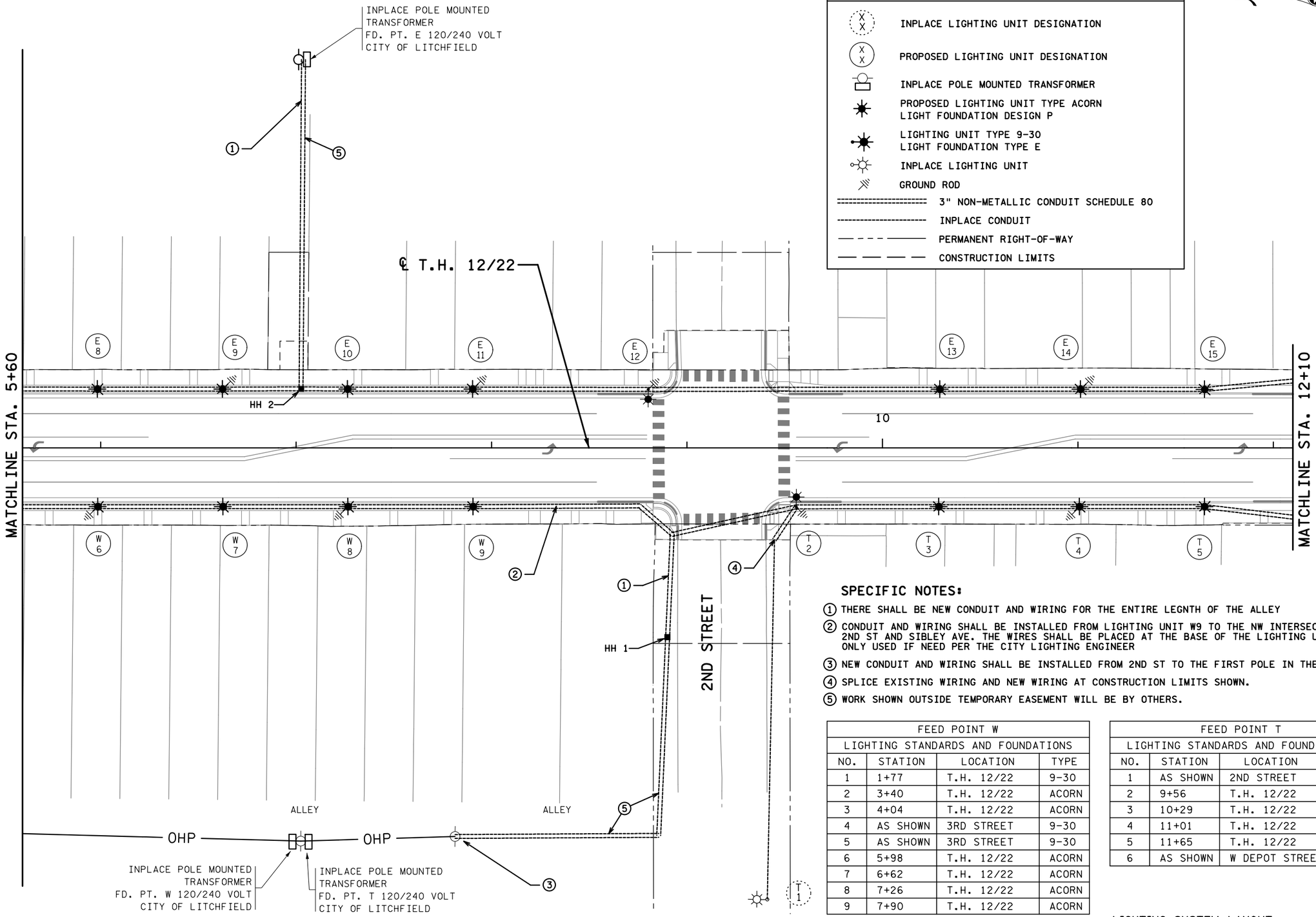
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S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
LIGHTING PLAN

SHEET 195 OF 239



SPECIFIC NOTES:

1. THERE SHALL BE NEW CONDUIT AND WIRING FOR THE ENTIRE LEGNTH OF THE ALLEY
2. CONDUIT AND WIRING SHALL BE INSTALLED FROM LIGHTING UNIT W9 TO THE NW INTERSECTION OF 2ND ST AND SIBLEY AVE. THE WIRES SHALL BE PLACED AT THE BASE OF THE LIGHTING UNIT AND ONLY USED IF NEED PER THE CITY LIGHTING ENGINEER
3. NEW CONDUIT AND WIRING SHALL BE INSTALLED FROM 2ND ST TO THE FIRST POLE IN THE ALLEY
4. SPLICE EXISTING WIRING AND NEW WIRING AT CONSTRUCTION LIMITS SHOWN.
5. WORK SHOWN OUTSIDE TEMPORARY EASEMENT WILL BE BY OTHERS.

FEED POINT W			
LIGHTING STANDARDS AND FOUNDATIONS			
NO.	STATION	LOCATION	TYPE
1	1+77	T.H. 12/22	9-30
2	3+40	T.H. 12/22	ACORN
3	4+04	T.H. 12/22	ACORN
4	AS SHOWN	3RD STREET	9-30
5	AS SHOWN	3RD STREET	9-30
6	5+98	T.H. 12/22	ACORN
7	6+62	T.H. 12/22	ACORN
8	7+26	T.H. 12/22	ACORN
9	7+90	T.H. 12/22	ACORN

FEED POINT T			
LIGHTING STANDARDS AND FOUNDATIONS			
NO.	STATION	LOCATION	TYPE
1	AS SHOWN	2ND STREET	9-30
2	9+56	T.H. 12/22	9-30
3	10+29	T.H. 12/22	ACORN
4	11+01	T.H. 12/22	ACORN
5	11+65	T.H. 12/22	ACORN
6	AS SHOWN	W DEPOT STREET	9-30

LIGHTING SYSTEM LAYOUT

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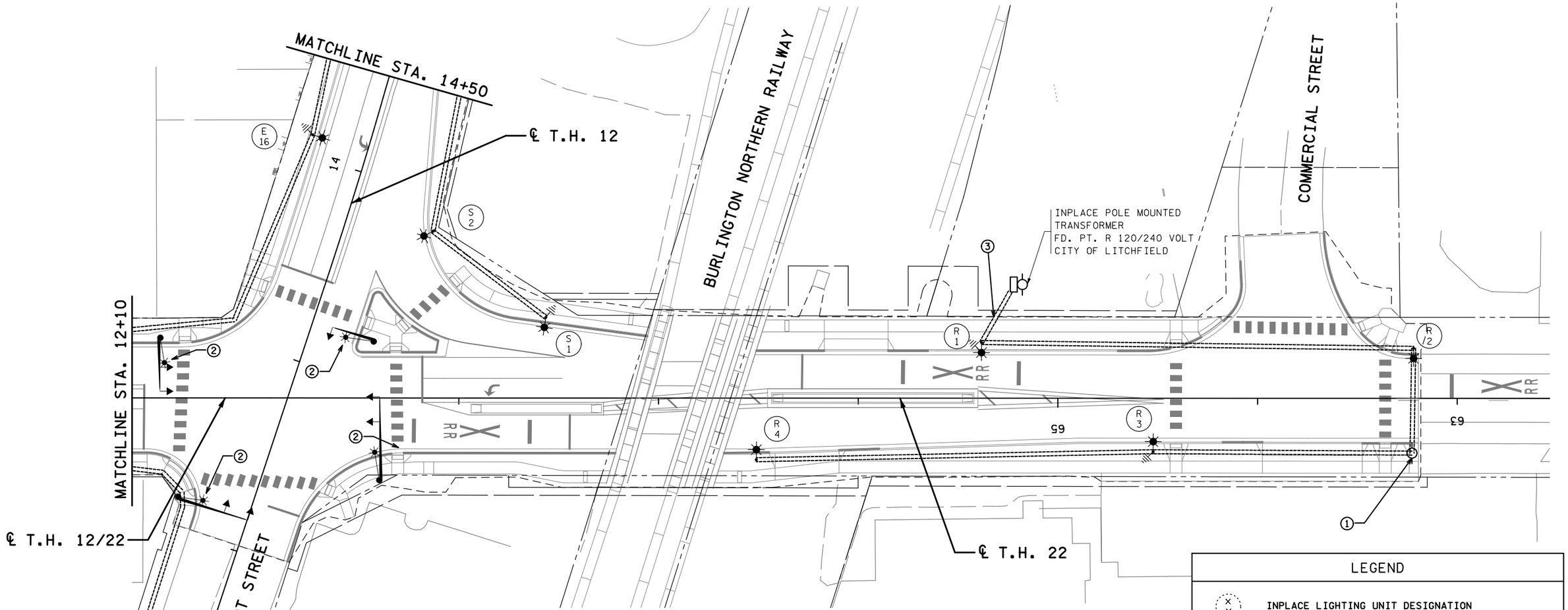
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S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
LIGHTING PLAN

SHEET 196 OF 239



SPECIFIC NOTES:

1. FEED THE EXISTING POLE WITH NEW WIRING
2. SEE SIGNAL PLANS FOR INTERSECTION LIGHTING
3. WORK SHOWN OUTSIDE TEMPORARY EASEMENT WILL BE BY OTHERS.

FEED POINT R			
LIGHTING STANDARDS AND FOUNDATIONS			
NO.	STATION	LOCATION	TYPE
1	65+38	T.H. 22	9-30
2	63+22	T.H. 22	9-30
3	64+52	T.H. 22	9-30
4	66+51	T.H. 22	9-30

LEGEND

- INPLACE LIGHTING UNIT DESIGNATION
- PROPOSED LIGHTING UNIT DESIGNATION
- INPLACE POLE MOUNTED TRANSFORMER
- LIGHTING UNIT TYPE 9-30
  LIGHT FOUNDATION DESIGN E
- INPLACE LIGHTING UNIT
- GROUND ROD
- 3" NON-METALLIC CONDUIT SCHEDULE 80
- PERMANENT RIGHT-OF-WAY
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS

LIGHTING SYSTEM LAYOUT

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SCALE FEET

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T.H. 12/22 RECONSTRUCTION
LIGHTING PLAN

SHEET 197 OF 239

LEGEND

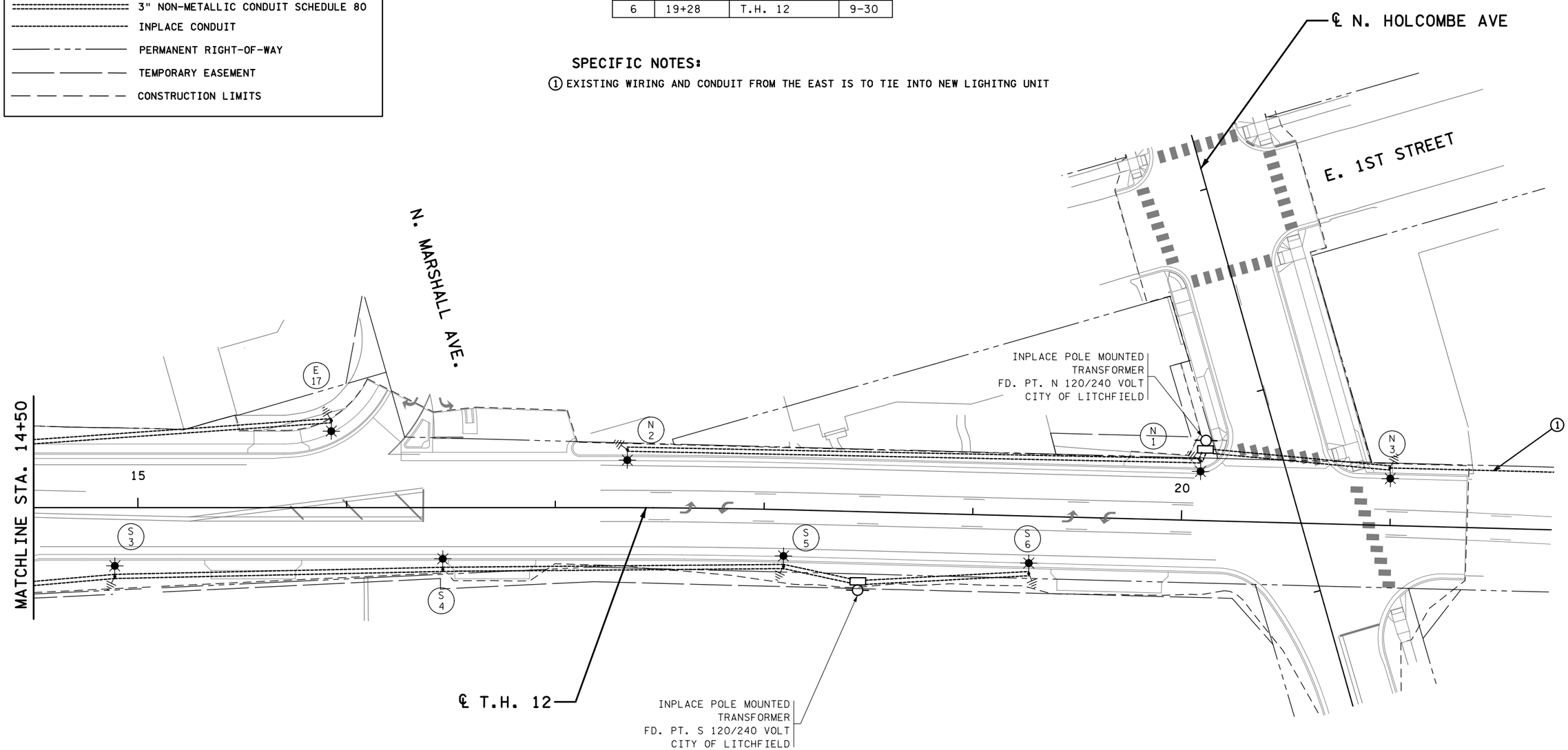
- PROPSED LIGHTING UNIT DESIGNATION
- INPLACE POLE MOUNTED TRANSFORMER
- LIGHTING UNIT TYPE 9-30
  LIGHT FOUNDATION DESIGN E
- GROUND ROD
- 3" NON-METALLIC CONDUIT SCHEDULE 80
- INPLACE CONDUIT
- PERMANENT RIGHT-OF-WAY
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS

FEED POINT S			
LIGHTING STANDARDS AND FOUNDATIONS			
NO.	STATION	LOCATION	TYPE
1	67+56	T.H. 22	9-30
2	13+70	T.H. 12	9-30
3	14+75	T.H. 12	9-30
4	16+46	T.H. 12	9-30
5	18+10	T.H. 12	9-30
6	19+28	T.H. 12	9-30

FEED POINT N			
LIGHTING STANDARDS AND FOUNDATIONS			
NO.	STATION	LOCATION	TYPE
1	20+21	T.H. 12	9-30
2	17+34	T.H. 12	9-30
3	20+99	T.H. 12	9-30

SPECIFIC NOTES:

① EXISTING WIRING AND CONDUIT FROM THE EAST IS TO TIE INTO NEW LIGHITNG UNIT



LIGHTING SYSTEM LAYOUT

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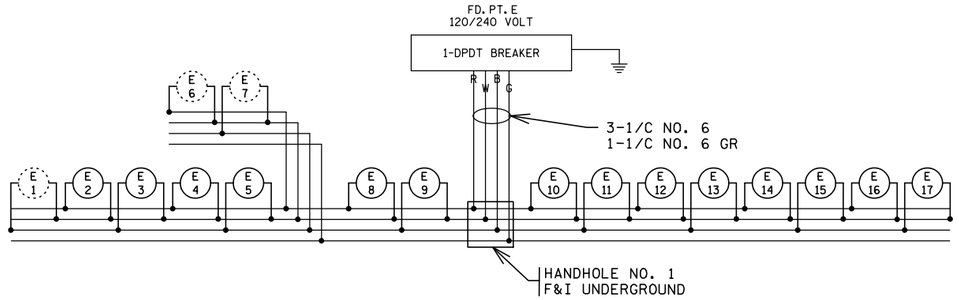
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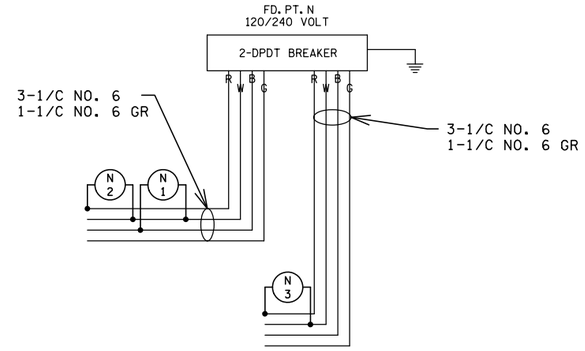
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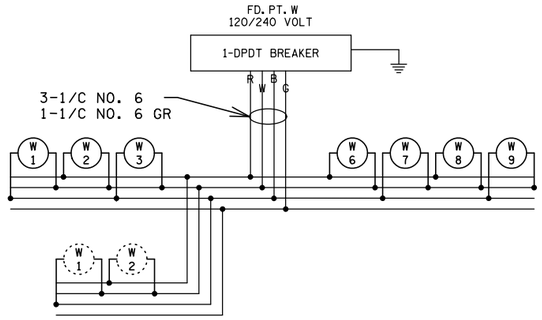
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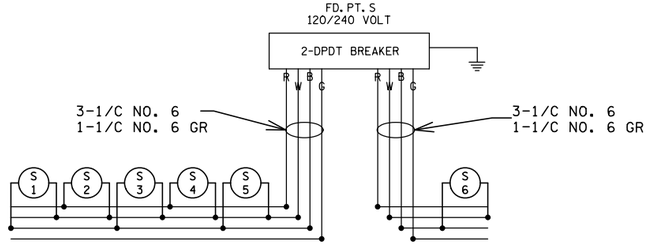
S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
LIGHTING PLAN

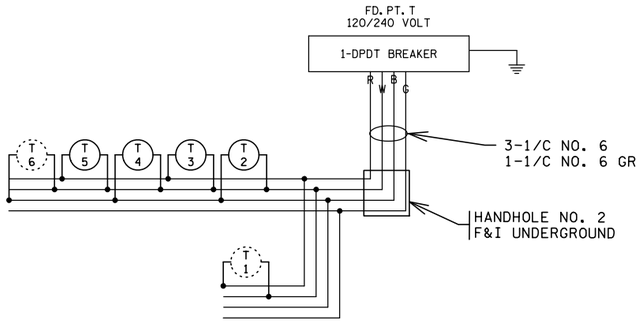
SHEET 198 OF 239

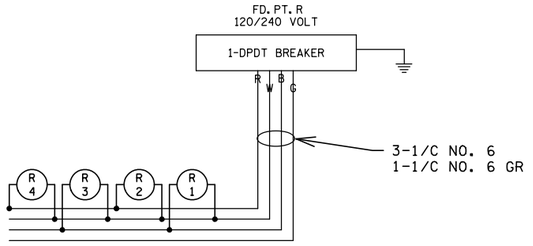












W DENOTES NEUTRAL CONDUCTOR
B AND R DENOTE CURRENT CARRYING CONDUCTORS
G DENOTES GROUND WIRE

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

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DRAWN	CMK
CHECKED	VES

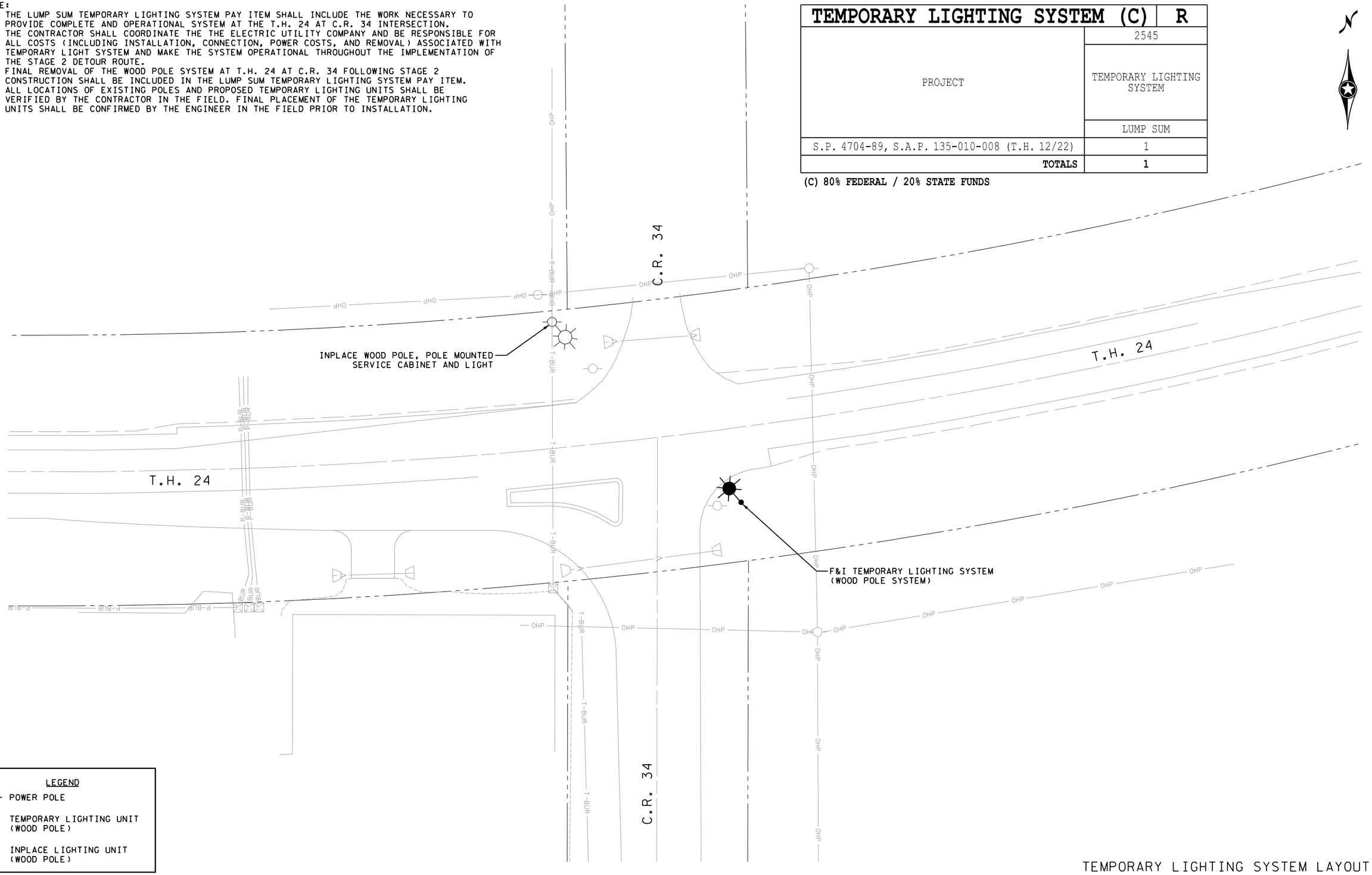
S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
LIGHTING PLAN

SHEET 199 OF 239

NOTE:
1. THE LUMP SUM TEMPORARY LIGHTING SYSTEM PAY ITEM SHALL INCLUDE THE WORK NECESSARY TO PROVIDE COMPLETE AND OPERATIONAL SYSTEM AT THE T.H. 24 AT C.R. 34 INTERSECTION.
2. THE CONTRACTOR SHALL COORDINATE THE THE ELECTRIC UTILITY COMPANY AND BE RESPONSIBLE FOR ALL COSTS (INCLUDING INSTALLATION, CONNECTION, POWER COSTS, AND REMOVAL) ASSOCIATED WITH TEMPORARY LIGHT SYSTEM AND MAKE THE SYSTEM OPERATIONAL THROUGHOUT THE IMPLEMENTATION OF THE STAGE 2 DETOUR ROUTE.
3. FINAL REMOVAL OF THE WOOD POLE SYSTEM AT T.H. 24 AT C.R. 34 FOLLOWING STAGE 2 CONSTRUCTION SHALL BE INCLUDED IN THE LUMP SUM TEMPORARY LIGHTING SYSTEM PAY ITEM.
4. ALL LOCATIONS OF EXISTING POLES AND PROPOSED TEMPORARY LIGHTING UNITS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD. FINAL PLACEMENT OF THE TEMPORARY LIGHTING UNITS SHALL BE CONFIRMED BY THE ENGINEER IN THE FIELD PRIOR TO INSTALLATION.

TEMPORARY LIGHTING SYSTEM (C)	R
	2545
PROJECT	TEMPORARY LIGHTING SYSTEM
	LUMP SUM
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22)	1
TOTALS	**1**

(C) 80% FEDERAL / 20% STATE FUNDS



TEMPORARY LIGHTING SYSTEM LAYOUT

0 25 50
SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

BOLTON & MENK
12224 NICOLLET AVENUE
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www.bolton-menk.com

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JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED	MSL
DRAWN	MSL
CHECKED	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
LIGHTING PLAN

SHEET 200 OF 239

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TRAFFIC CONTROL SIGNAL SYSTEMS

INTERSECTIONS OF TH 12 (DEPOT STREET) AND TH 22 (SIBLEY AVE), AND TH 12/22 (SIBLEY AVE) AND THIRD STREET IN THE CITY OF LITCHFIELD, MEEKER COUNTY

ABBREVIATIONS

APS	ACCESSIBLE PEDESTRIAN SIGNAL
AWF	ADVANCE WARNING FLASHER
C.D.	COUNT DOWN
D2-1 (e.g.)	DETECTOR (PHASE 2, NO. 1)
DEG	DEGREES
DWK	DON'T WALK INDICATION
EQ.G	EQUIPMENT GROUND
EVP	EMERGENCY VEHICLE PRE-EMPTION
F&I	FURNISH AND INSTALL
FL	FLASH/FLASHING
FYA	FLASHING YELLOW ARROW
FYLA	FLASHING YELLOW LEFT ARROW
GLA	GREEN LEFT ARROW
GRN	GREEN INDICATION
GR. RD.	GROUND ROD
GRA	GREEN RIGHT ARROW
GTA	GREEN THRU ARROW
HH	HANDHOLE
HHS	HANDHOLE SIDEWALK ONLY
HPS	HIGH PRESSURE SODIUM
IND	INDICATION
IMC	INTERMEDIATE METAL CONDUIT
INP	INPLACE
INS. GR.	INSULATED GROUND
JB	JUNCTION BOX
LED	LIGHT EMITTING DIODE
LUM	LUMINAIRE
NEU	NEUTRAL
NMC	NONMETALLIC CONDUIT
P1-1 (e.g.)	PEDESTRIAN HEAD (PHASE 1, NO. 1)
PB	PUSH BUTTON
PB2-1 (e.g.)	PUSH BUTTON (PHASE 2, NO. 1)
PEC	PHOTOELECTRIC CELL
PED	PEDESTRIAN
PVC	POLYVINYL CHLORIDE (CONDUIT)
RED	RED INDICATION
R&S	REMOVE AND SALVAGE
RLA	RED LEFT ARROW
RSC	RIGID STEEL CONDUIT
S&I	SALVAGE AND INSTALL
SOP	SOURCE OF POWER
SPR	SPARE
STA	STATION
WLK	WALK INDICATION
YEL	YELLOW INDICATION
YLA	YELLOW LEFT ARROW
YRA	YELLOW RIGHT ARROW

SYMBOLS

- HANDHOLE
- EQ.G CONNECTION
- EVP CONFIRMATORY LIGHT
- EVP DETECTOR
- EVP DETECTOR AND CONFIRMATORY LIGHT
- (2) LUMINAIRE NO.
- (3) SIGNAL BASE NO.
- (3-2) SIGNAL HEAD NO./FLASHER HEAD NO.
- SPLICE

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

INDEX

SHEET NO.	SYSTEM	DESCRIPTION
201		TITLE, STANDARD PLATES AND TABULATION
202 to 204		DETAILS
205	SYS A	CABINET DETAILS
206 to 209	SYS A	SIGNAL PLANS
210 to 211	SYS A	MAST ARM SIGNING
212	SYS A	REMOVAL PLAN
213 to 214	SYS A	FOR INFORMATION ONLY
215	SYS B	CABINET DETAILS
216 to 219	SYS B	SIGNAL PLANS
220	SYS B	MAST ARM SIGNING
221 to 222	SYS B	FOR INFORMATION ONLY
223		INTERCONNECT PLAN

TRAFFIC SIGNAL TABULATION							S
ITEM NO.	DESCRIPTION	UNIT	TOTAL	S.P. 4704-89 S.A.P. 135-010-008 (T.H. 12/22) (C)	S.P. 4705-47 S.A.P. 135-010-008 (T.H. 12) (C)	S.P. 4709-32 S.A.P. 135-010-009 (T.H. 22) (C)	CITY OF LITCHFIELD (D)
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM A	LUMP SUM	1	0.5	0.25	0.25	
2565	EMERGENCY VEHICLE PREEMPTION SYSTEM B	LUMP SUM	1				1
2565	TRAFFIC CONTROL INTERCONNECT	LUMP SUM	1	1			
2565	TRAFFIC CONTROL SIGNAL SYSTEM A	SYSTEM	1	0.5	0.25	0.25	
2565	TRAFFIC CONTROL SIGNAL SYSTEM B	SYSTEM	1				1
2565	TEMPORARY SIGNAL SYSTEM	SYSTEM	1	1			

(C) 80% FEDERAL / 20% STATE FUNDS

(D) 100% CITY FUNDS

STANDARD PLATES - SIGNAL SYSTEMS

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT

PLATE NO.		DESCRIPTION
▻ 7038	A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
▻ 7113	A	CONCRETE APPROACH NOSE DETAIL
► 8111	E	TRAFFIC SIGNAL BRACKETING (PEDESTAL MOUNTED)
► 8112	I	PEDESTAL FOUNDATION
► 8117	G	PRECAST CONCRETE HAND HOLE
► 8118	D	SERVICE EQUIPMENT AND POLE
► 8119	C	GROUND MOUNTED CABINET FOUNDATION
► 8120	Q	POLE FOUNDATION (PA-85)
▻ 8121	H	TRANSFORMER BASE AND POLE BASE PLATE
► 8122	F	PEDESTAL AND PEDESTAL BASE
► 8123	G	POLE AND MAST ARM
► 8126	L	POLE FOUNDATION (PA90 AND PA100)
► 8129	A	SHIM AND WASHER
▻ 8130	E	SAW CUT LOOP DETECTORS
► 8132	B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR

► STANDARD PLATES APPLICABLE TO THIS PROJECT

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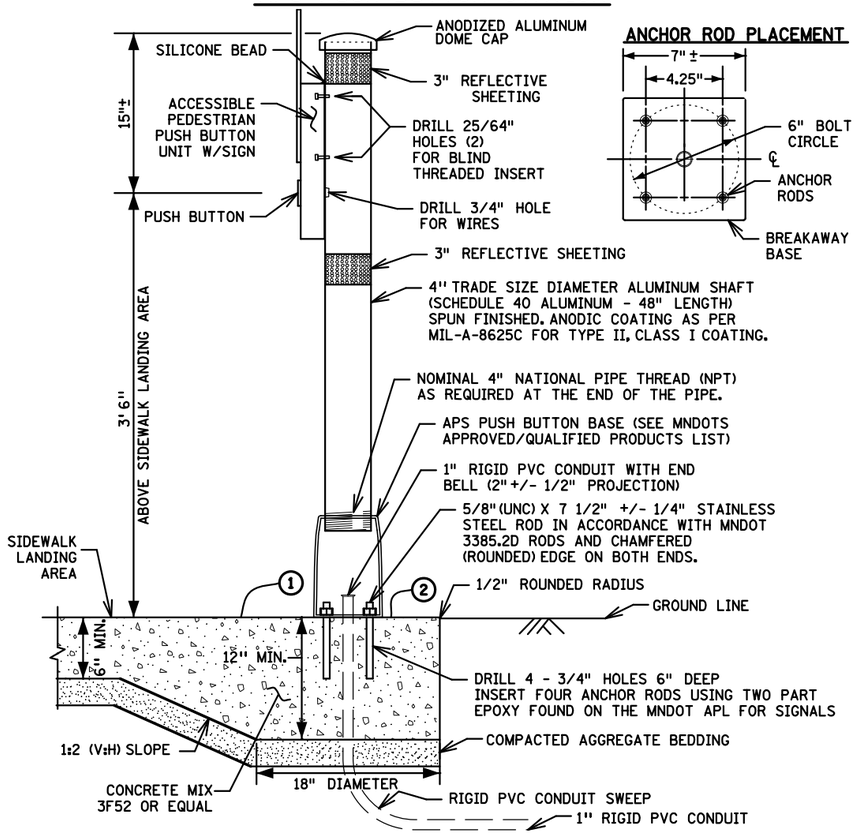
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S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 201 OF 239

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APS PUSH BUTTON STATION



NOTES:

PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE SHAFT.

ORIENT ACCESS OPENING ON THE BREAKAWAY PEDESTAL DIRECTLY BELOW THE APS BUTTON.

PLUMB THE PUSH BUTTON STATION WITH LEVELING SHIMS IN ACCORDANCE WITH STANDARD PLATE 8129.

INSTALL BLIND THREADED INSERTS USING MANUFACTURER'S SPECIFIC INSERTION TOOL.

USE ZINC PLATED STEEL 1/4 - 20 UNC BLIND THREADED INSERTS SUITABLE FOR MOUNTING ON SURFACE WALL THICKNESS OF .337. APPROVED BLIND INSERTS ARE LISTED ON MNDOT'S APPROVED/QUALITY PRODUCTS LIST WEBSITE FOR TRAFFIC SIGNALS.

USE APS 1/4 - 20 STAINLESS STEEL MOUNTING BOLTS. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.

APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" SHAFT.

USE WHITE REFLECTIVE SHEETING AT INTERSECTION CORNERS AND YELLOW REFLECTIVE SHEETING IN CENTER MEDIANS. APPROVED TUBE DELINEATOR SHEETING IS LISTED ON MNDOT'S APPROVED/QUALIFIED PRODUCTS LIST WEBSITE FOR SIGNING.

AN 18" X 6" FIBER FORMING TUBE MAY BE USED FOR THE LOWER HALF OF THE FOUNDATION WHEN CONDITIONS DO NOT ALLOW FOR THE 18" X 6" HOLE TO STAND OPEN.

(1) THE PUSH BUTTON STATION FOUNDATION IS MONOLITHIC (POURED AT ONE TIME) WITH THE SIDEWALK. PROVIDE A 1:2 (V:H) SLOPE GRADE WHERE THE 6" MIN SIDEWALK DEPTH TRANSITIONS TO THE 12" MIN FOUNDATION DEPTH. MAINTAIN THE COMPACTED AGGREGATE BEDDING AND THICKNESS USED FOR THE SIDEWALK THROUGHOUT THE SLOPE AND FOUNDATION GRADING. PROVIDE 1:2 (V:H) SLOPE GRADING 360 DEGREES FOR THE TRANSITION FROM THE SIDEWALK TO THE FOUNDATION WHEN THE FOUNDATION IS NOT LOCATED NEAR EDGE OF SIDEWALK AND IS SURROUNDED BY CONCRETE WALK.

(2) ENSURE CONCRETE CONTROL JOINTS AND EDGE OF CONCRETE WALK ARE A MINIMUM 9" FROM THE CENTER OF THE PUSH BUTTON FOUNDATION.

TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION

THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC INFORMATION REGARDING PEDESTRIAN RAMP LAYOUT AND PUSH BUTTON LOCATIONS, SEE THE PLAN.

SUPPLEMENTAL GUIDANCE FOR CONSTRUCTING COMPLIANT APS PUSH BUTTONS:

(1) THE FACE OF THE BUTTON SHALL BE PARALLEL WITH THE OUTSIDE EDGE OF CROSSWALK.

(2) A MINIMUM 4 FT X 4 FT LANDING AREA SHALL BE PROVIDED ADJACENT TO EACH BUTTON, WITH A 2 PERCENT MAXIMUM SLOPE IN ALL DIRECTIONS.

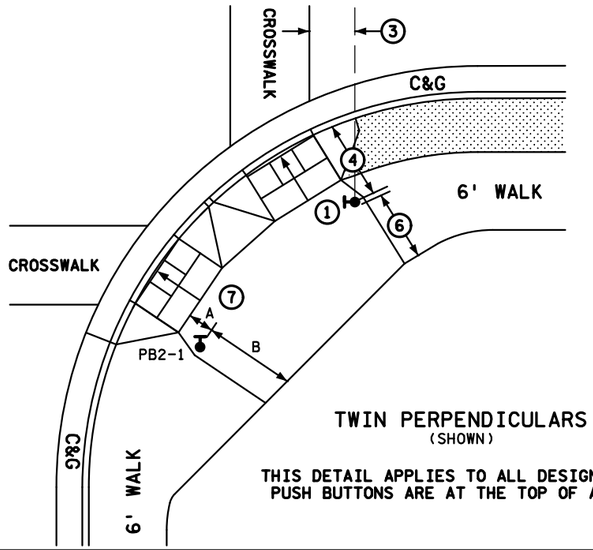
(3) BUTTONS SHALL BE WITHIN 5 FT OF THE OUTSIDE EDGE OF THE CROSSWALK.

(4) BUTTONS SHALL BE BETWEEN 1.5 FT AND 10 FT FROM THE BACK OF CURB OR EDGE OF ROADWAY, MEASURED IN THE DIRECTION OF TRAVEL. STANDALONE PUSH BUTTON STATIONS SHOULD BE 4' MINIMUM FROM THE BACK OF CURB TO AVOID KNOCKDOWNS.

(5) BUTTONS SHALL BE AT LEAST 10 FT APART.

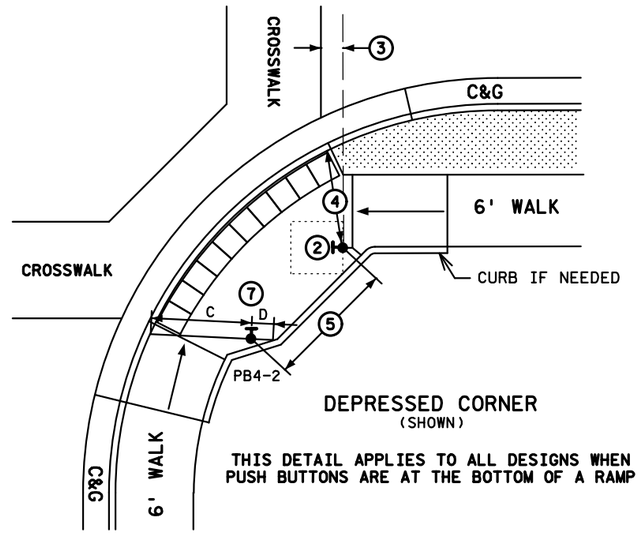
(6) PROVIDE A MAINTENANCE ACCESS ROUTE (MAR) WHEREVER POSSIBLE FOR SNOW REMOVAL PURPOSES. A MAR REQUIRES A 6 FT MINIMUM CLEAR DISTANCE BETWEEN A PUSH BUTTON AND ANY OBSTRUCTIONS, INCLUDING BUILDINGS, V-CURB, ELECTRICAL FOUNDATIONS, SIGNAL CABINETS, OR ANOTHER PUSH BUTTON.

(7) BUTTON SHOULD BE 2 FT MINIMUM FROM RAMP GRADE BREAK AND BACK OF WALK.



TWIN PERPENDICULARS
(SHOWN)

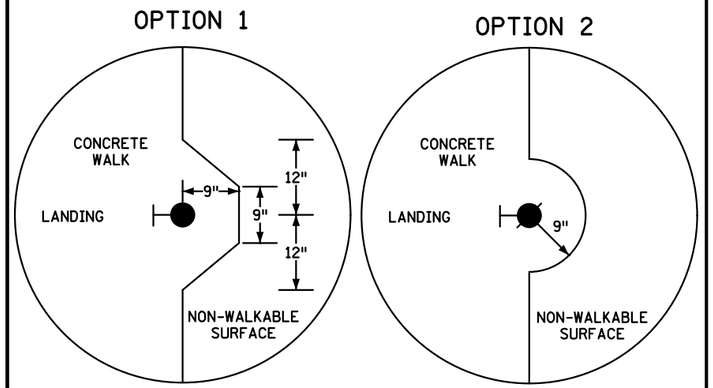
THIS DETAIL APPLIES TO ALL DESIGNS WHEN PUSH BUTTONS ARE AT THE TOP OF A RAMP



DEPRESSED CORNER
(SHOWN)

THIS DETAIL APPLIES TO ALL DESIGNS WHEN PUSH BUTTONS ARE AT THE BOTTOM OF A RAMP

CONTRACTOR MUST USE OPTION 1 OR 2 WHEN THE APS PUSH BUTTON IS SHOWN AT THE EDGE OF WALK. OPTION USED (OR SELECTED) MUST BE THE SAME THROUGHOUT THE ENTIRE PROJECT.



SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
SIGNAL NO.	X	Y		
PB2-1	-	-	A	B
PB4-2	-	-	C	D

A - DISTANCE MEASURED FROM THE PUSH BUTTON TO THE FRONT OF LANDING/TOP OF RAMP

B - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE BACK OF LANDING/EDGE OF WALK

C - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE OUTSIDE EDGE OF DOMES IN THE DIRECTION OF TRAVEL

D - CLEAR DISTANCE FROM THE PUSH BUTTON TO THE BACK OF LANDING MEASURED IN THE OPPOSITE DIRECTION OF TRAVEL

SIGNAL DETAILS

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S.A.P. 135-117-005

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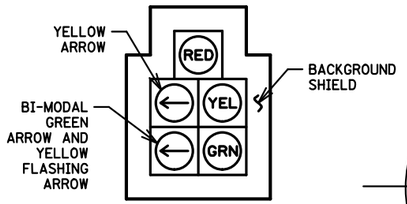
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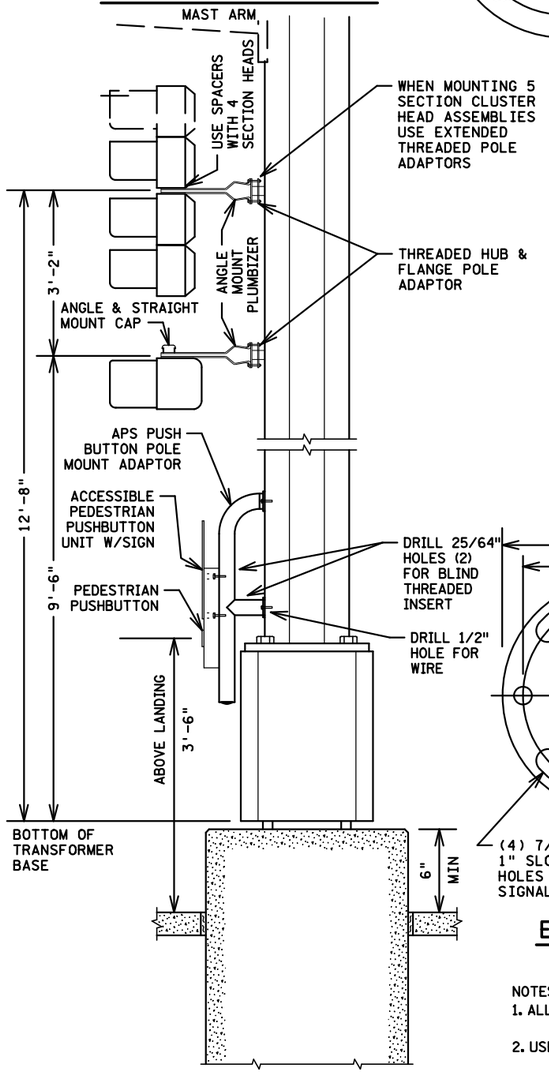
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T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 202 OF 239

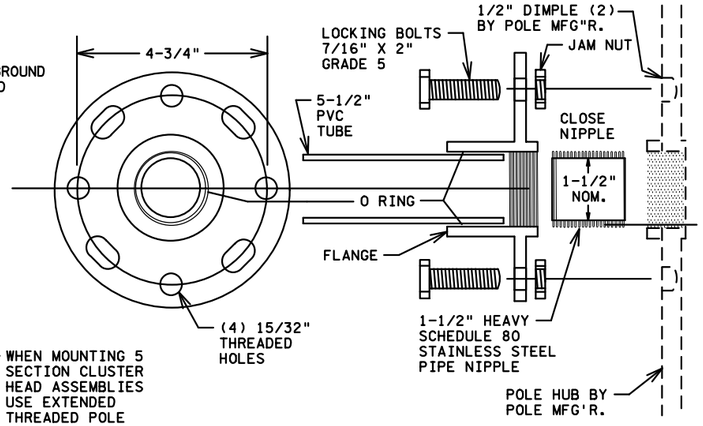


5 SECTION FYA CLUSTER HEAD DETAIL



TYPICAL SIGNAL POLE MOUNTING

NOT TO SCALE



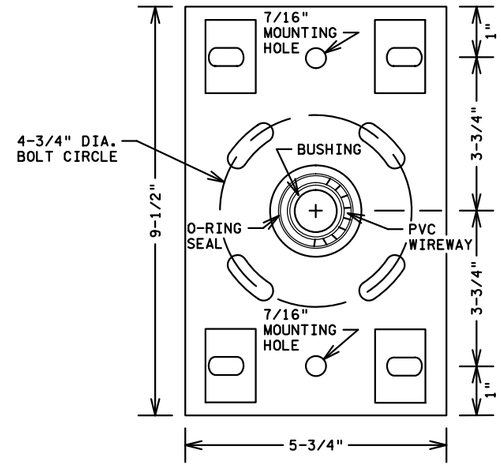
THREADED HUB AND FLANGE POLE ADAPTOR



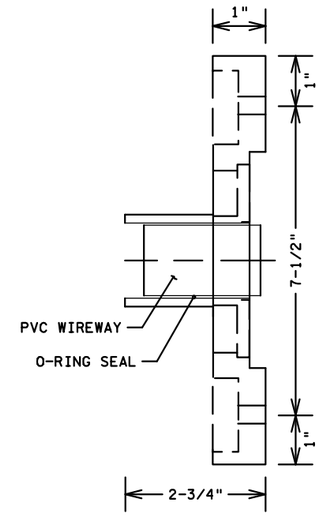
NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.

EXTENDED THREADED POLE ADAPTER

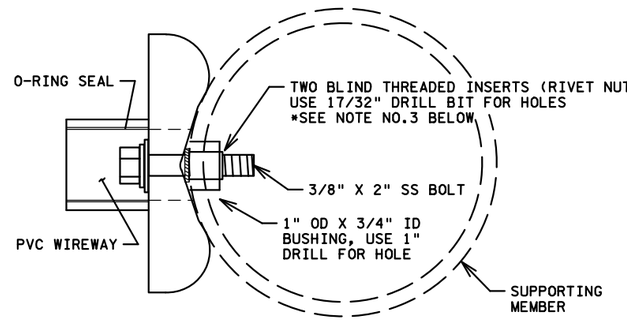
NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



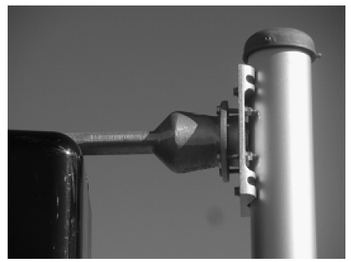
BOLT ON HUB & FLANGE



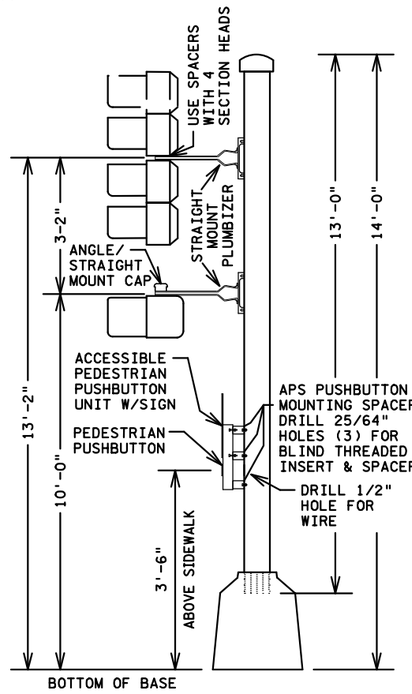
SIDE VIEW



TOP VIEW



NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. BLIND THREADED INSERTS (RIVET NUT) MUST BE INSERTED USING MANUFACTURERS SPECIFIC INSERTION TOOL. NO OTHER METHOD IS ACCEPTABLE.
4. SEE STANDARD PLATE NUMBER 8122 FOR ADDITIONAL PEDESTAL POLE DETAILS.



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

SIGNAL DETAIL

S.A.P. 135-010-008
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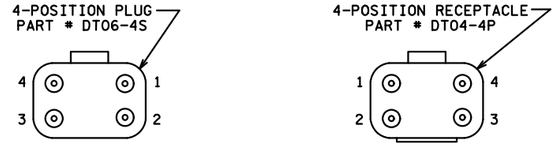
S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 203 OF 239

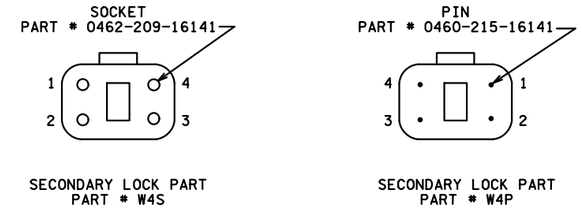
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4-POSITION CONNECTOR

(BACK VIEW)

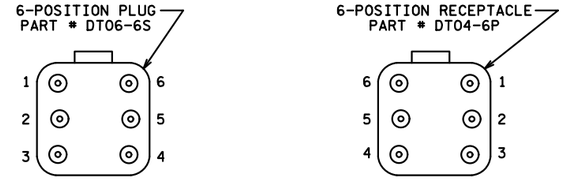


(FRONT VIEW)

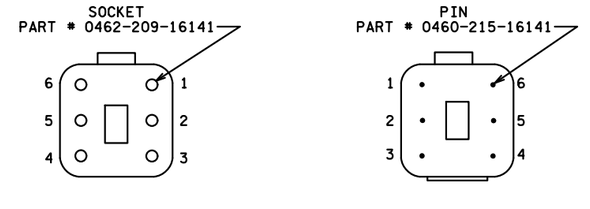


6-POSITION CONNECTOR

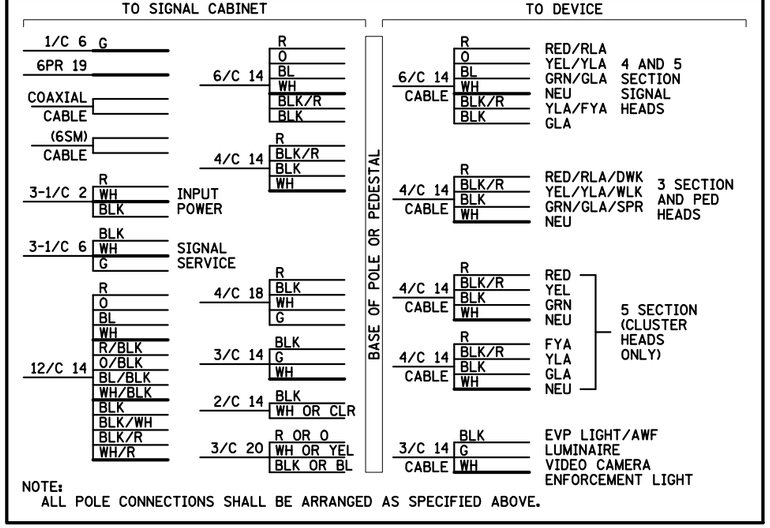
(BACK VIEW)



(FRONT VIEW)



CONDUCTOR COLOR CODE (14 GAUGE)



NOTE:
ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

4 Position DT Connector (3 Section Head/DWK/WLK)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R or R/BLK or BLK	1	R	RED or DWK
O or O/BLK or BLK/WH or BLK	2	BLK/R	YEL or WLK
BL or BL/BLK or BLK/R or BLK	3	BLK	GRN or SPR
WH or WH/BLK or WH/R	4	WH	NEU

6 Position DT Connector (4 and 5 Section Heads)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
R	1	R	RED
O	2	O	YEL
BL	3	BL	GRN
WH	4	WH	NEU
O/BLK or BLK/R (6/C)	5	BLK/R	YLA or FYLA
BL/BLK or BLK (6/C)	6	BLK	GLA

4 Position DT Connector

(Used with 3 Conductor Cable Only) (EVP LHT/LUM/AWF/ VID CAM/ENF LHT)

Wire to Control Cabinet	Connector pin #	Wire to Signal Indication	Signal Indication
BLK	1	BLK	EVP LHT or LUM or RED or YEL or VID CAM or ENF LHT or AWF
(Not Used)	2	(Not Used)	(Not Used) (See Note #8)
G	3	G	EQ.G
WH	4	WH	NEU

4 Position DT Connectors

(Use Two Connectors for 5 Section FYA Cluster Heads)

12 Conductor Wire to Control Cabinet	Connector pin #	4 Conductor to Signal Indication	Signal Indication
R	1	R	RED
O	2	BLK/R	YEL
BL	3	BLK	GRN
WH	4	WH	NEU
R/BLK	1	R	FYA
O/BLK	2	BLK/R	YLA
BL/BLK	3	BLK	GLA
WH/BLK	4	WH	NEU

WIRE COLOR CODE KEY

R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

WIRE SPECIFICATION CHART

Type	Name	Specification Number
1/C 2	Power Conductors	3815.2B.1
1/C 6	Power Conductors	3815.2B.1
1/C 6 INS.GR.	Grounding Conductors	3815.2B.5
2/C 14	Loop Detector Lead-In Cable	3815.2C.4
3/C 14	Signal Control Cable	3815.2C.3
4/C 14	Signal Control Cable	3815.2C.3
6/C 14	Signal Control Cable	3815.2C.3
12/C 14	Signal Control Cable	3815.2C.3
6PR 19	Telephone Cables Outdoor	3815.2C.6.b
3/C 20	EVP Detector Cable	3815.2C.5

NOTES:

1. TERMINATE THE DT04-P RECEPTACLE TO THE WIRING HARNESS RUNNING FROM THE BASE/JUNCTION BOX OF THE POLES TO THE SIGNAL INDICATIONS.
2. TERMINATE THE DT06-_S PLUGS TO THE CABLES RUNNING FROM THE TRAFFIC SIGNAL CABINETS TO THE BASE/JUNCTION BOX OF THE POLES.
3. LEAVE 24 INCHES OF SLACK ON EACH CABLE IN EACH POLE BASE /JUNCTION BOX.
4. STRIP 5 IN TO 6 IN OF THE OUTER JACKET OF EACH SIGNAL CABLE IN POLE BASES.
5. STRIP 1/4 IN OF INSULATION FROM EACH INDIVIDUAL CONDUCTOR IN EACH POLE BASE.
6. CRIMP PINS OR SOCKETS USING RATCHETING TYPE CRIMPING TOOL HDT-48-00. NO OTHER CRIMPING TOOL WILL BE ALLOWED.
7. TERMINATE CABLES AND CONDUCTORS AS SHOWN ON PLAN.
8. INSERT SEALING PLUGS (PART 114017) IN UNUSED PLUG AND RECEPTACLE PINS.
9. LABEL EACH HALF OF THE CONNECTOR (PLUG AND RECEPTACLE) WITH THE DEVICE DESIGNATION AS SHOWN ON THE WIRING DIAGRAM USING A PERMANENT BLACK MARKER.

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SIGNAL DETAILS

S.P. 4704-89

T.H. 12/22 RECONSTRUCTION

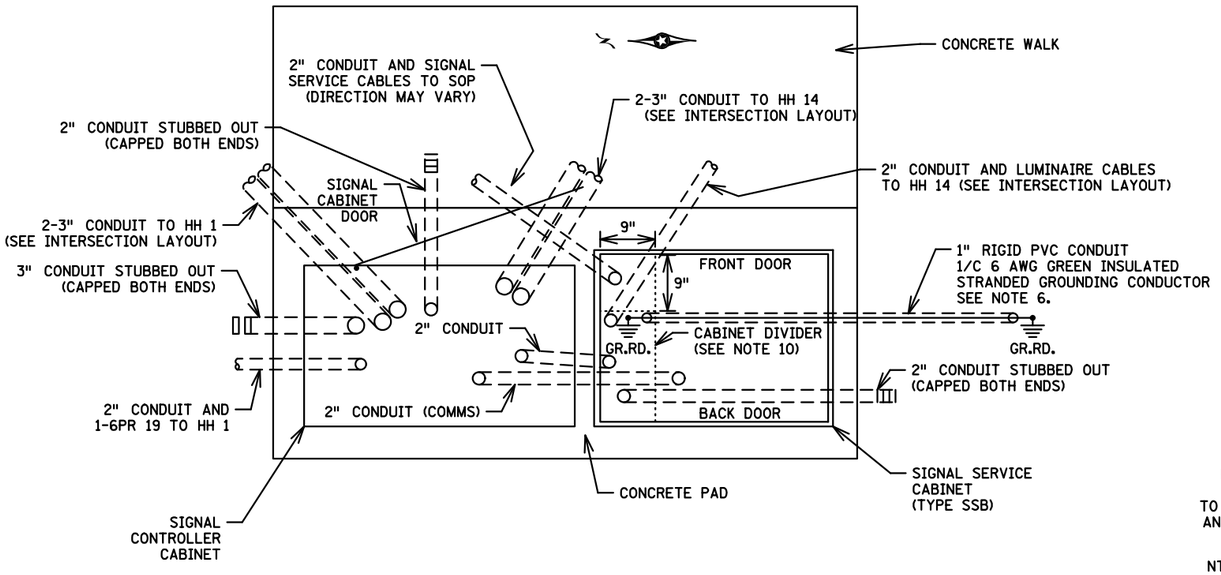
SIGNAL PLAN

SHEET 204 OF 239

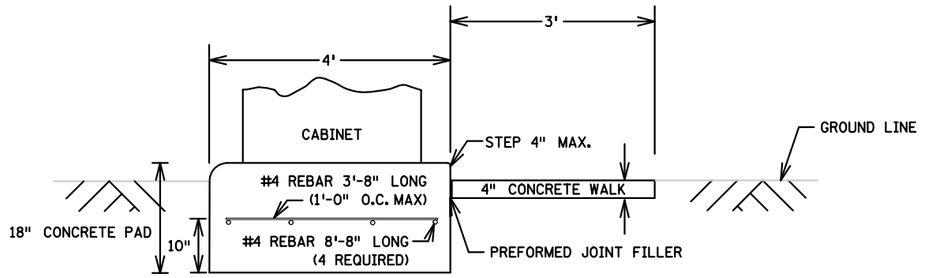
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

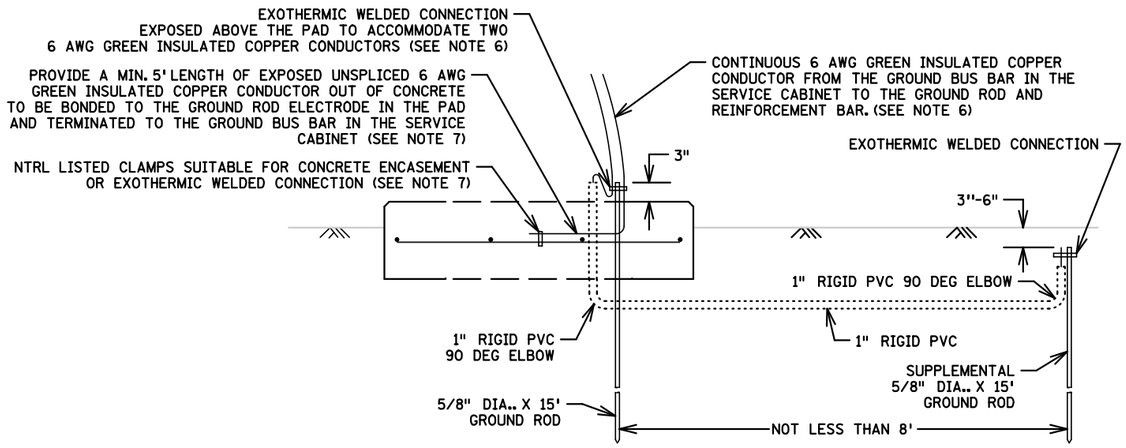
PLAN VIEW



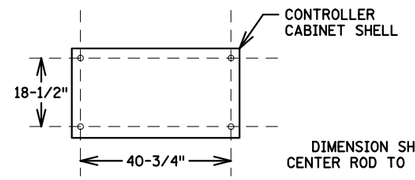
SIDE VIEW



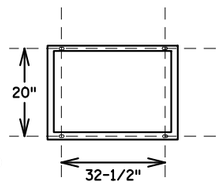
GROUNDING ELECTRODE SYSTEM



CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN

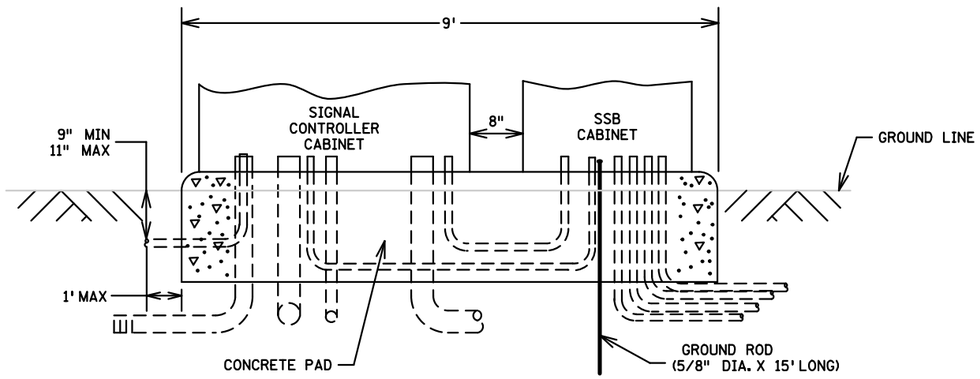


S.S.B. SERVICE CABINET BOLT PATTERN



DIMENSION SHOWN ARE CENTER ROD TO CENTER ROD

FRONT VIEW



SIGNAL SYSTEM A - CABINTET DETAILS

NOTES:

1. THE ANCHOR RODS, NUTS, WASHERS AND RUBBER GASKET FOR THE CONTROLLER CABINET SHALL BE FURNISHED BY MNDOT.
2. THE OUTER EDGE OF THE ENTIRE EQUIPMENT PAD AND CONCRETE WALK SHALL BE BEVELED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE CAPPED UNTIL CABLES ARE PULLED IN.
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3F52 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. SUPPLY TWO 15 FOOT GROUND ROD ELECTRODES IN ACCORDANCE WITH 2545.3R. PROVIDE ONE GROUND ROD IN THE EQUIPMENT PAD IN ACCORDANCE WITH 2545.3 F.3 AND THE OTHER OUTSIDE OF THE PAD WITH A MINIMUM OF 8 FEET OF SEPARATION BETWEEN ELECTRODES. BOND THE TWO GROUND RODS TOGETHER WITH ONE CONTINUOUS LENGTH UNSPLICED CONDUCTOR FROM THE OUTER MOST GROUND ROD TO THE GROUND BUS BAR IN THE CABINET. EXOTHERMICALLY WELD THE 6 AWG STRANDED GREEN INSULATED CONDUCTOR TO THE GROUND RODS. PLACE THE BONDING CONNECTION TO THE EQUIPMENT PAD GROUND ROD ABOVE THE CONCRETE. APPLY DE-OX COMPOUND TO THE GROUNDING CONNECTIONS AFTER FINAL ASSEMBLY.
7. BOND A 6 AWG GREEN INSULATED GROUNDING CONDUCTOR TO THE REBAR GRID PRIOR TO CONCRETE POURING OPERATIONS. ENSURE THE CONDUCTOR IS PLACED IN THE LOAD SIDE OF THE CABINET. TERMINATE THE GREEN INSULATED 6 AWG GROUND CONDUCTOR ON THE GROUND BUS IN THE SERVICE CABINET WITHOUT SPLICES.
8. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE PLACED BELOW THE CONCRETE.
9. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
10. CORRECT PLACEMENT OF CONDUIT TO THE LEFT OF THE S.S.B. CABINET DIVIDER IS CRITICAL.
11. ANCHOR RODS SHALL PROJECT A MINIMUM OF 3" ABOVE THE CONCRETE BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
12. CABINETS TO BE CENTERED (LEFT & RIGHT) ON THE PAD.
13. BRUSH ON ANTI-SEIZE LUBRICANT MUST BE APPLIED TO ALL ANCHOR ROD THREADS PROTRUDING ABOVE THE CONCRETE PAD BEFORE THE CABINET IS SET.
14. CENTER THE REINFORCEMENT REBAR GRID IN THE CONCRETE PAD.

SYSTEM ID: 1735076
METER ADDRESS:
TE: 10994

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SIGNAL PLAN

SHEET 205 OF 239

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SIGNAL HEAD CHART

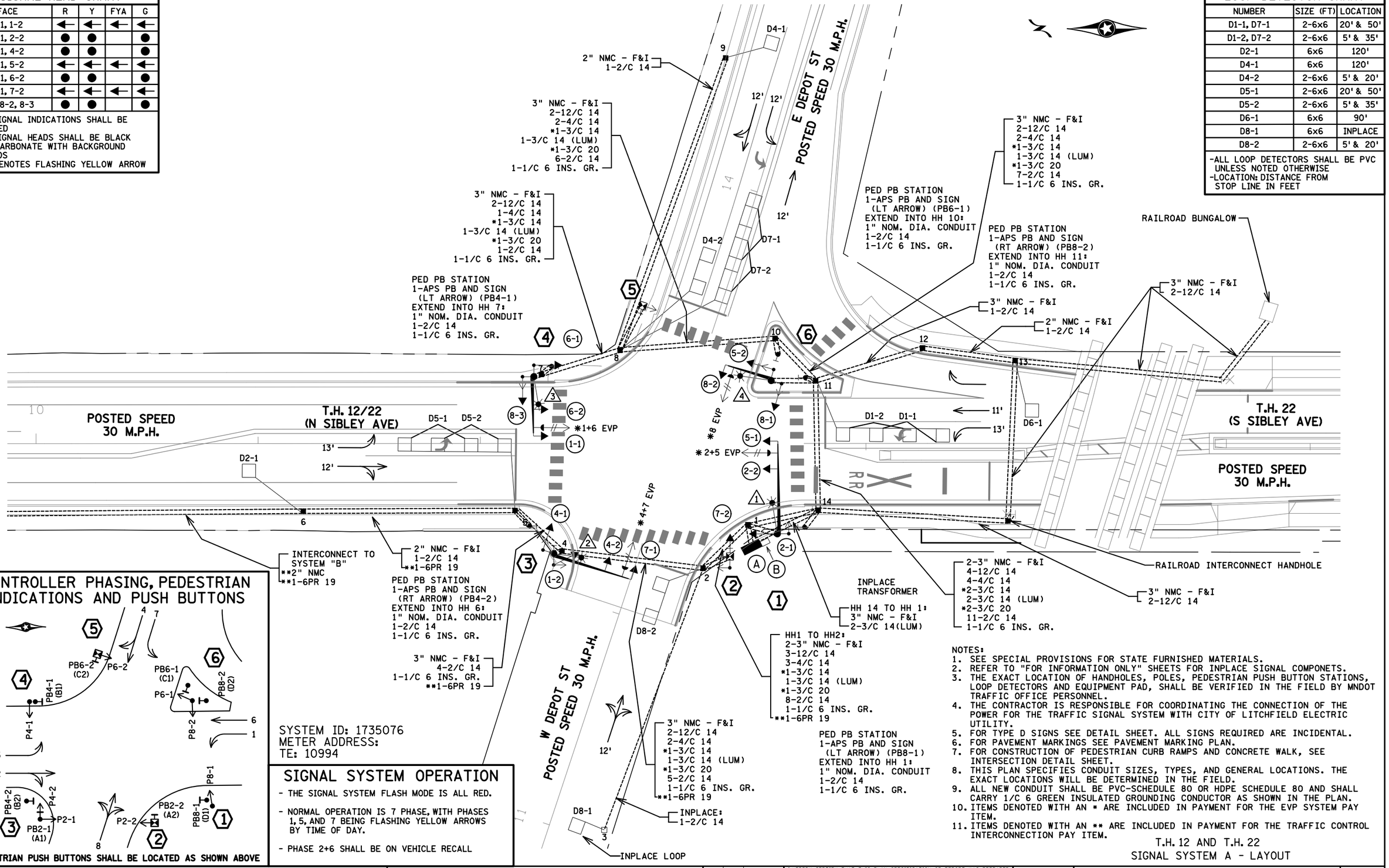
FACE	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2	●	●		●
4-1, 4-2	●	●		●
5-1, 5-2	←	←	←	←
6-1, 6-2	●	●		●
7-1, 7-2	←	←	←	←
8-1, 8-2, 8-3	●	●		●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION
D1-1, D7-1	2-6x6	20' & 50'
D1-2, D7-2	2-6x6	5' & 35'
D2-1	6x6	120'
D4-1	6x6	120'
D4-2	2-6x6	5' & 20'
D5-1	2-6x6	20' & 50'
D5-2	2-6x6	5' & 35'
D6-1	6x6	90'
D8-1	6x6	INPLACE
D8-2	2-6x6	5' & 20'

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM STOP LINE IN FEET



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SYSTEM ID: 1735076
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TE: 10994

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 7 PHASE, WITH PHASES 1, 5, AND 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASE 2+6 SHALL BE ON VEHICLE RECALL

NOTES:
1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
2. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONETS.
3. THE EXACT LOCATION OF HANDHOLES, POLES, PEDESTRIAN PUSH BUTTON STATIONS, LOOP DETECTORS AND EQUIPMENT PAD, SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM WITH CITY OF LITCHFIELD ELECTRIC UTILITY.
5. FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCIDENTAL.
6. FOR PAVEMENT MARKINGS SEE PAVEMENT MARKING PLAN.
7. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS AND CONCRETE WALK, SEE INTERSECTION DETAIL SHEET.
8. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.
9. ALL NEW CONDUIT SHALL BE PVC-SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C 6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
10. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
11. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 12 AND T.H. 22
SIGNAL SYSTEM A - LAYOUT

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0 20 40
SCALE FEET

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T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 206 OF 239

INTERSECTION NOTES

(5) PEDESTAL FOUNDATION
10' PEDESTAL POLE PLUS BASE
1-STRAIGHT MOUNT C.D. PED HEAD
1-APS PB AND SIGN (RT ARROW) (PB6-2)
AND APS PB MOUNTING SPACERS
2" NMC - F&I TO HH 8:
1-4/C 14
1-2/C 14
1-1/C 6 INS. GR.

(4) PA85 POLE FOUNDATION
TYPE PA85-A-25-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD
AT 12'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
1-ANGLE MOUNT C. D. PED HEAD AT 90 DEG
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASES 1+6)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
R10-X12 SIGN PANEL (42"X48") - OVERHEAD
1-TYPE "D" SIGN PANEL (72"X60") - OVERHEAD (D-3)
3" NMC - F&I TO HH 7:
2-12/C 14
1-4/C 14
*1-3/C 14
1-3/C 14 (LUM)
*1-3/C 20
1-1/C 6 INS. GR.

(3) PA90 POLE FOUNDATION
TYPE PA90-A-35-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED HEAD AT 90 AND 180 DEG
1-APS PB AND SIGN (LT ARROW) (PB2-1)
AND APS POLE MOUNT ADAPTOR
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASES 4+7)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
R10-X12 SIGN PANEL (72"X60") - OVERHEAD
D9-22L SIGN PANEL (24"X48") - OVERHEAD
1-TYPE "D" SIGN PANEL (72"X54") - OVERHEAD (D-2)
3" NMC - F&I TO HH 4:
2-12/C 14
2-4/C 14
*1-3/C 14
1-3/C 14 (LUM)
*1-3/C 20
1-2/C 14
1-1/C 6 INS. GR.

(6) PA85 POLE FOUNDATION
TYPE PA85-A-20-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED HEADS
AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASE 8)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-TYPE "D" SIGN PANEL (72"X60") - OVERHEAD (D-4)
3" NMC - F&I TO HH 11:
2-12/C 14
2-4/C 14
*1-3/C 14
1-3/C 14 (LUM)
*1-3/C 20
1-1/C 6 INS. GR.

(1) PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
1-ANGLE MOUNT SIGNAL AT 180 DEG
1-ANGLE MOUNT C. D. PED HEAD AT 90 DEG
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASES 2+5)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
R10-X12 SIGN PANEL (42"X48") - OVERHEAD
1-TYPE "D" SIGN PANEL (72"X54") - OVERHEAD (D-1)
D9-22T SIGN PANEL (24"X48") - OVERHEAD
3" NMC - F&I TO HH 1:
2-12/C 14
1-4/C 14
*1-3/C 14
1-3/C 14 (LUM)
*1-3/C 20
1-1/C 6 INS. GR.

(2) PEDESTAL FOUNDATION
13' PEDESTAL POLE PLUS BASE
1-STRAIGHT MOUNT SIGNAL AT 0 DEG
1-STRAIGHT MOUNT C.D. PED HEAD
AT 180 DEG
1-APS PB AND SIGN (RT ARROW) (PB2-2)
AND APS PB MOUNTING SPACERS
2" NMC - F&I TO HH 1:
1-12/C 14
1-4/C 14
1-2/C 14
1-1/C 6 INS. GR.

(A) EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB) WITH BATTERY BACKUP SYSTEM INSTALLED
CONTROLLER AND CABINET (STATE FURNISHED)
2-3" NMC - F&I TO HH 1:
5-12/C 14
4-4/C 14
*2-3/C 14
9-2/C 14
*2-3/C 20
1-1/C 6 INS. GR.

2-3" NMC - F&I TO HH 14:
6-12/C 14
4-4/C 14
*2-3/C 14
11-2/C 14
*2-3/C 20
1-1/C 6 INS. GR.

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD
2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)
CONTROLLER CABINET TO SERVICE CABINET:
2" CONDUIT
3-1/C 6
CONTROLLER CABINET TO SERVICE CABINET (COMMS):
2" CONDUIT
1-6PR 19
SERVICE CABINET TO GROUND MOUNTED TRANSFORMER:
2" CONDUIT
3-1/C 2
2" CONDUIT TO HH 1:
**1-6PR 19

SERVICE CABINET TO HH 14:
2" CONDUIT
4-3/C 14 (LUM)
SERVICE CABINET TO EXTERNAL GR. RD.:
1" CONDUIT
1-1/C 6 INS. GR.

(B) INPLACE:
SOP-GROUND MOUNTED
TRANSFORMER
2" CONDUIT INTO SERVICE CABINET:
3-1/C 2

NOTES:
1) SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
2) CONTRACTOR SHALL PROVIDE EXTENDED BRACKETS FOR EACH POLE MOUNTED VEHICLE SIGNAL HEAD (BOTH HORIZONTAL AND VERTICAL).
3) ALL PUSH BUTTONS SHALL BE APS AND INCLUDE SIGN.
4) ALL PEDESTRIAN SIGNAL HEADS SHALL BE LED AND HAVE COUNTDOWN TIMERS.
5) ALL PVC CONDUITS ARE ASSUMED TO BE SCHEDULE 80 PVC.
6) ITEMS DENOTED WITH A * SHALL BE PAID FOR AS PART OF THE EVP PAY ITEM.
7) ITEMS DENTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECT PAY ITEM.
8) ALL SIGNING ADJUSTMENTS AND ADDITIONS SHALL BE INCIDENTAL.

T.H. 12 AND T.H. 22
SIGNAL SYSTEM A - POLE NOTES

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SYSTEM ID: 1735076 S.A.P. 135-010-008
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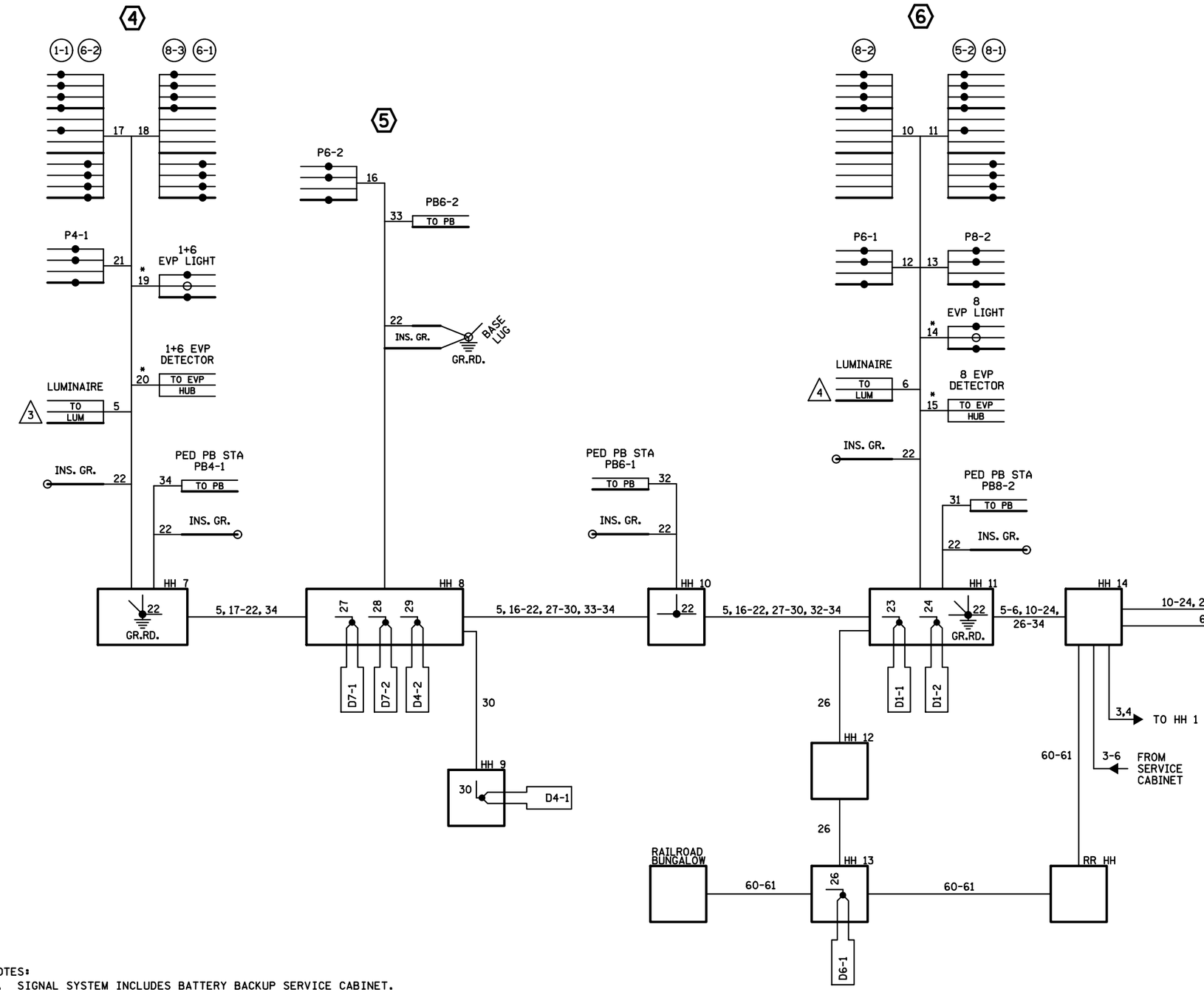
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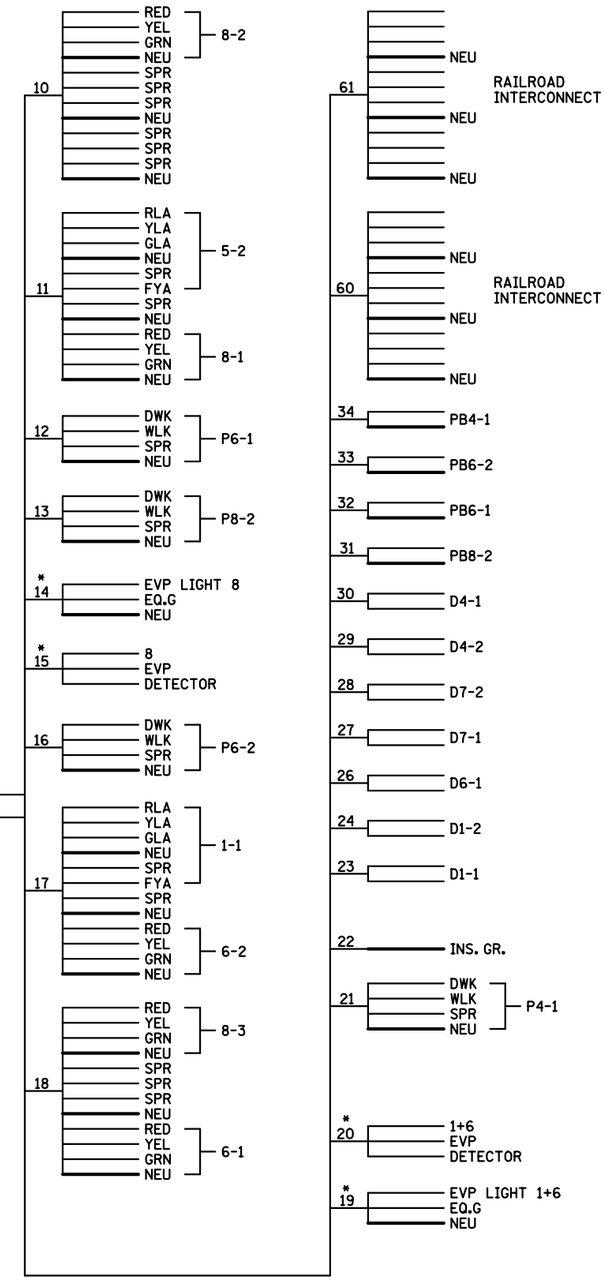
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DRAWN CMK
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S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 207 OF 239



CONTROLLER CABINET



NOTES:
1. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET.
2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
3. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
4. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 12 AND T.H. 22
SIGNAL SYSTEM A - WIRING DIAGRAM (1 OF 2)

SYSTEM ID: 1735076 S.A.P. 135-010-008
METER ADDRESS: S.A.P. 135-010-009
TE: 10994 S.A.P. 135-117-005

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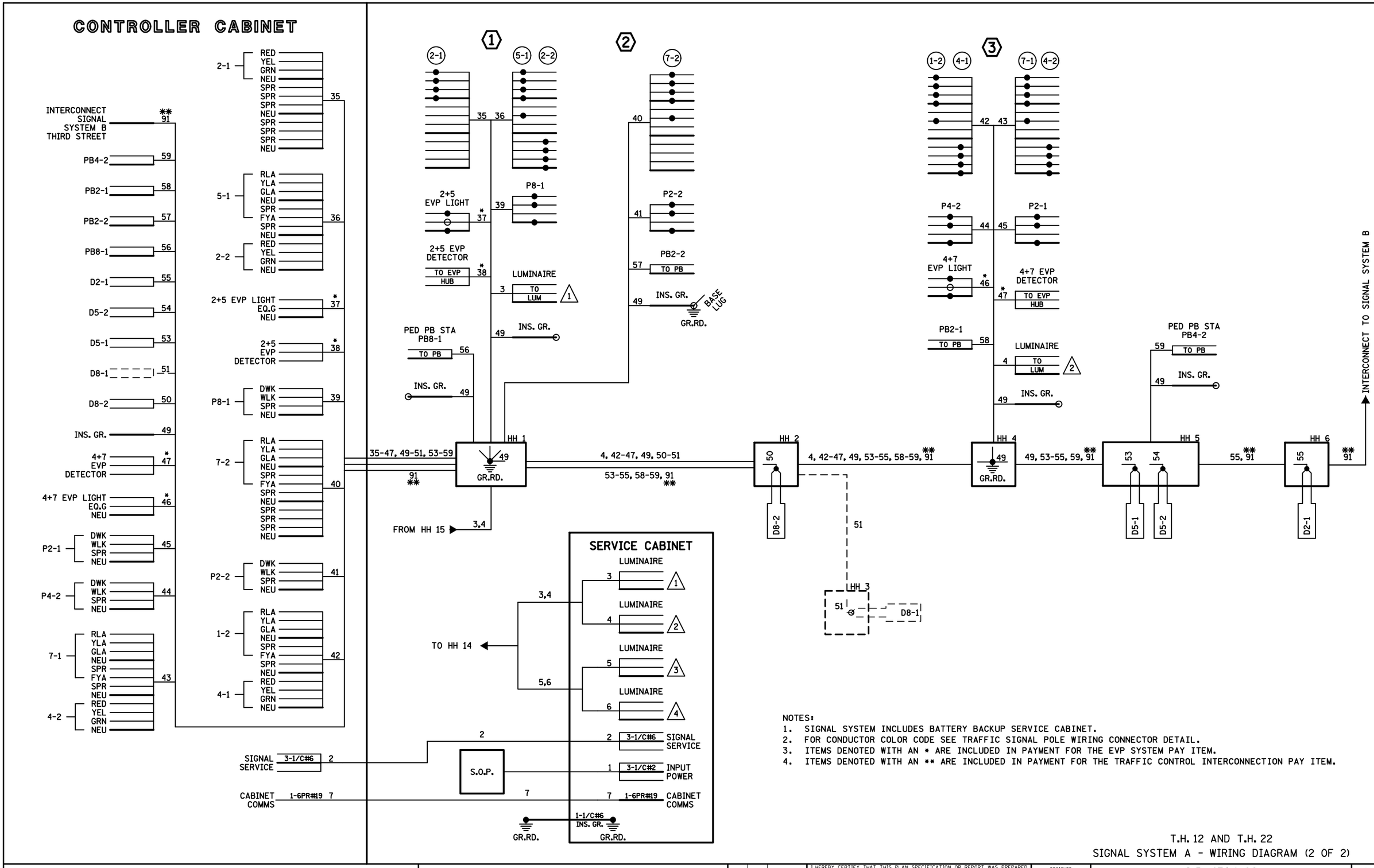
VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

DESIGNED	CMK
DRAWN	CMK
CHECKED	VES

S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 208 OF 239

1/29/2019 2:00:01 PM



NOTES:
1. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET.
2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
3. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
4. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 12 AND T.H. 22
SIGNAL SYSTEM A - WIRING DIAGRAM (2 OF 2)

SYSTEM ID: 1735076 S.A.P. 135-010-008
METER ADDRESS: S.A.P. 135-010-009
TE: 10994 S.A.P. 135-117-005

cd470489_sgl004.dgn

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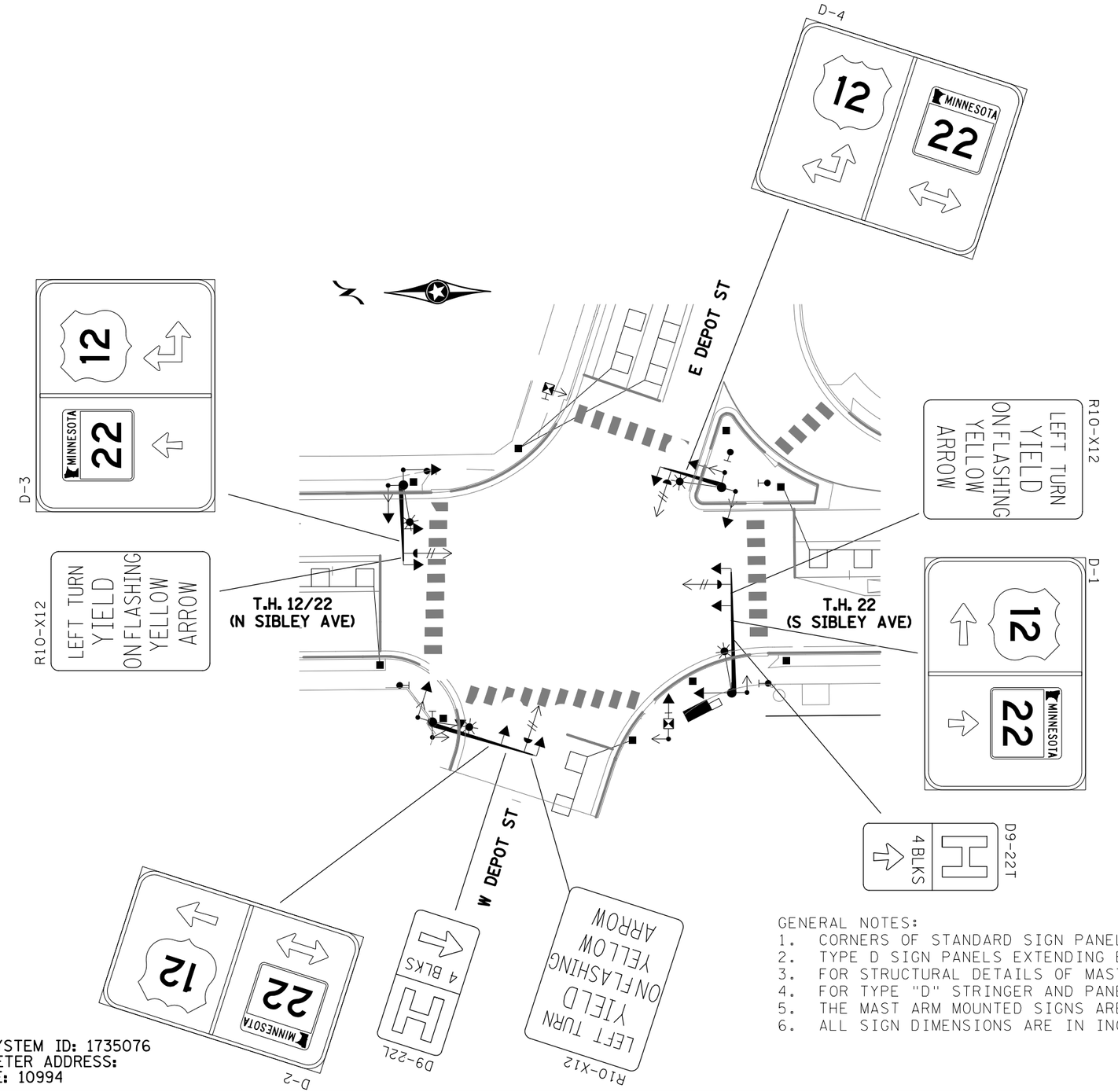
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VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

DESIGNED	CMK
DRAWN	CMK
CHECKED	VES

S.P. 4704-89
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

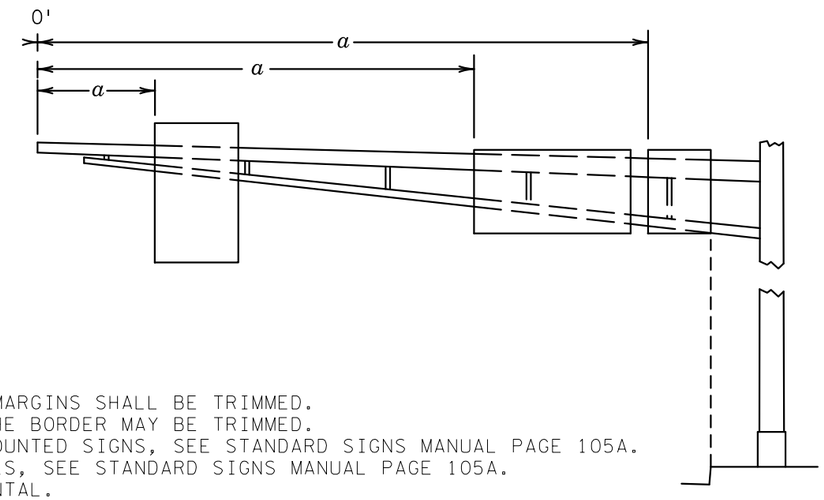
SHEET 209 OF 239



MAST ARM MOUNTED SIGNS							
SIGN PANEL OR SIGN NO.	POLE NO.	a (FEET)	SIZE (INCHES)	MOUNTING BRACKET		AREA/SIGN (SQ. FT.)	NO. REQ.
				NUMBER	SPACING (1)		
R10-X12	1	0	42 X 48	2	18	14	1
D-1	1	5	72 X 54	4	24	27.75	1
D9-22T	1	15	24 X 48	2	12	8	1
R10-X12	3	0	42 X 48	2	18	14	1
D9-22L	3	5	24 X 48	2	12	8	1
D-2	3	14	72 X 54	4	24	27	1
R10-X12	4	0	42 X 48	2	18	14	1
D-3	4	5	72 X 60	4	24	30	1
D-4	6	9	72 X 60	4	24	30	1

SPECIFIC NOTE:
(1) SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 1/1/03) FOR BRACKET SPACING REQUIREMENTS.

MAST ARM SIGN LOCATION



GENERAL NOTES:
1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER MAY BE TRIMMED.
3. FOR STRUCTURAL DETAILS OF MAST ARMS MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL PAGE 105A.
4. FOR TYPE "D" STRINGER AND PANEL DETAILS, SEE STANDARD SIGNS MANUAL PAGE 105A.
5. THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL.
6. ALL SIGN DIMENSIONS ARE IN INCHES.

SYSTEM ID: 1735076
METER ADDRESS:
TE: 10994

T.H. 12 AND T.H. 22
SIGNAL SYSTEM A - MAST ARM SIGNING

1/29/2019 2:00:05 PM

0 20 40
SCALE FEET

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S.A.P. 135-010-008
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S.A.P. 135-117-005

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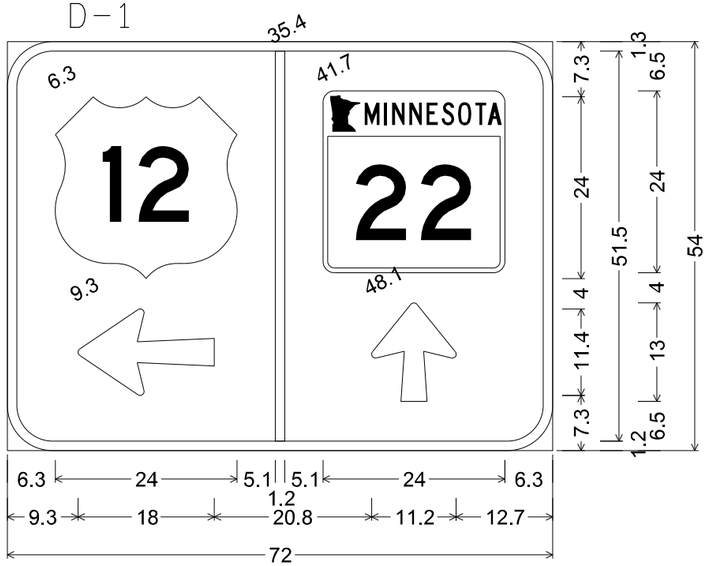
VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

DESIGNED GNG
DRAWN GNG
CHECKED VES

S.P. 4704-89
T.H. 12 / 22 RECONSTRUCTION
SIGNAL PLAN

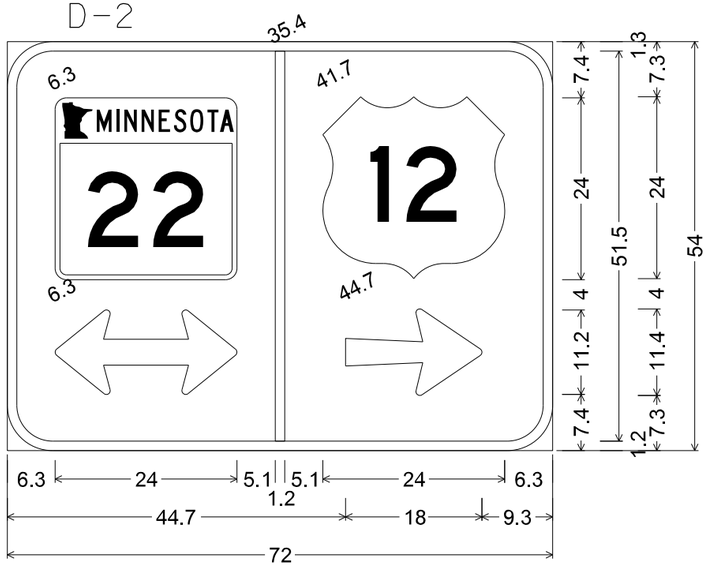
SHEET 210 OF 239

D-1



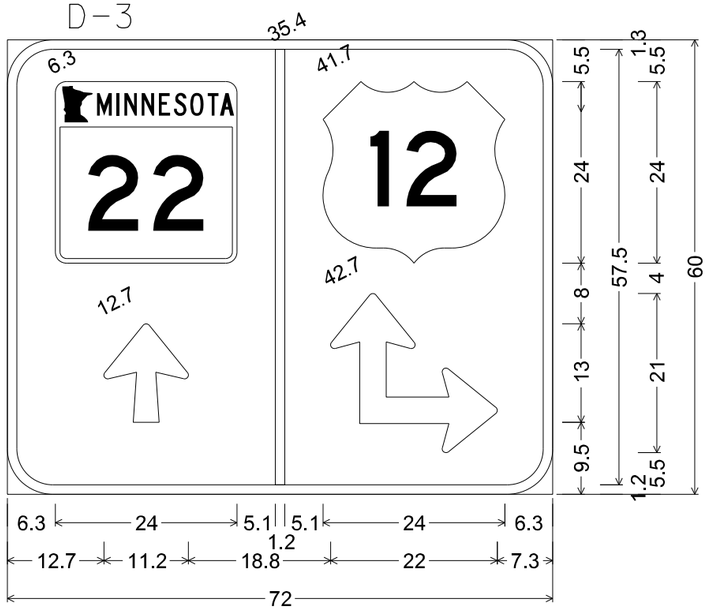
6.0" Radius, 1.3" Border, White on Green;
Arrow 14 - 18.0" 180°; Arrow 5 - 13.0" 90°;

D-2



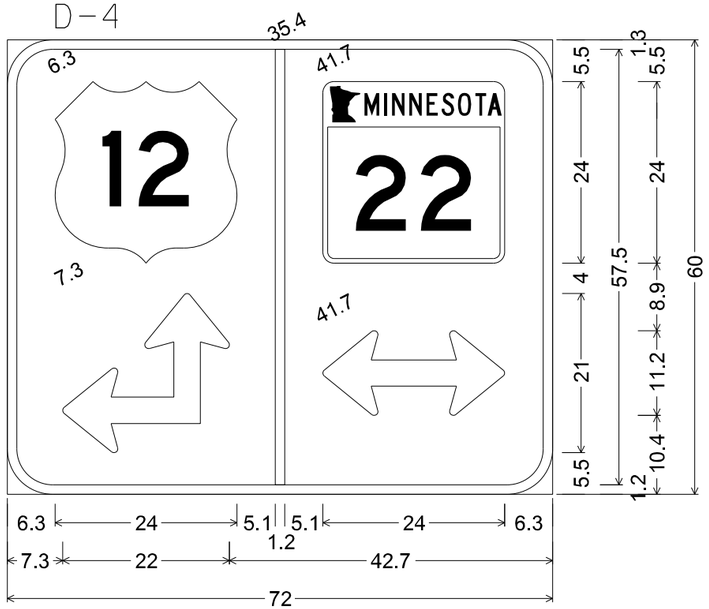
6.0" Radius, 1.3" Border, White on Green;
Double Headed Arrow 5 - 24.0" 0°;
Arrow 14 - 18.0" 0°;

D-3



6.0" Radius, 1.3" Border, White on Green;
Arrow 5 - 13.0" 90°;
90 Deg Double Headed Arrow 22.0" X 21.0";

D-4



6.0" Radius, 1.3" Border, White on Green;
90 Deg Double Headed Arrow 22.0" X 21.0";
Double Headed Arrow 5 - 24.0" 0°;

GENERAL NOTE:
- ALL SIGN DIMENSIONS ARE IN INCHES

T.H. 12 AND T.H. 22
SIGNAL SYSTEM A - MAST ARM SIGNING

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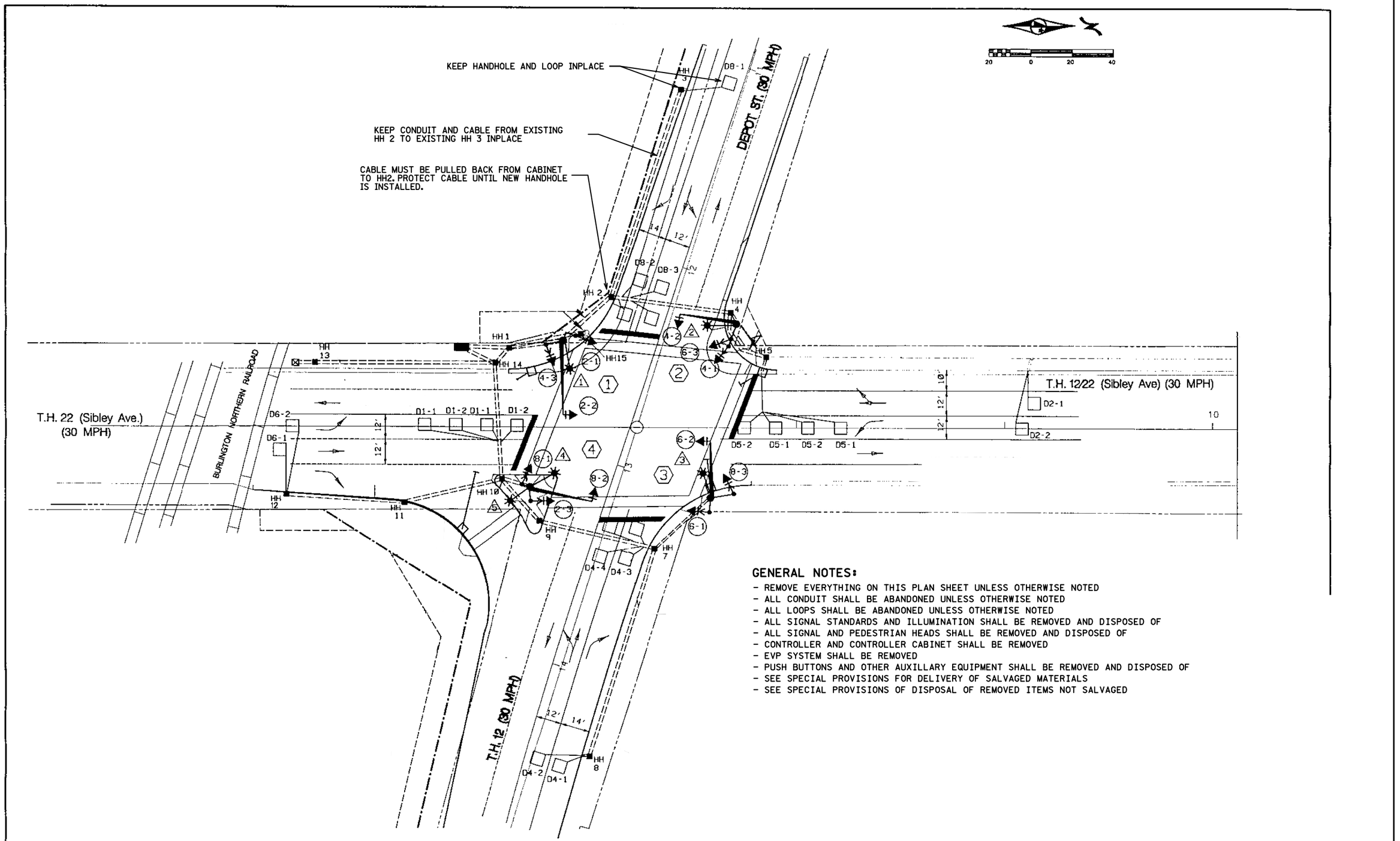
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VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

DESIGNED	DRAWN	CHECKED
GNG	GNG	VES

S.P. 4704-89
T.H. 12 / 22 RECONSTRUCTION
SIGNAL PLAN

SHEET 211 OF 239



GENERAL NOTES:

- REMOVE EVERYTHING ON THIS PLAN SHEET UNLESS OTHERWISE NOTED
- ALL CONDUIT SHALL BE ABANDONED UNLESS OTHERWISE NOTED
- ALL LOOPS SHALL BE ABANDONED UNLESS OTHERWISE NOTED
- ALL SIGNAL STANDARDS AND ILLUMINATION SHALL BE REMOVED AND DISPOSED OF
- ALL SIGNAL AND PEDESTRIAN HEADS SHALL BE REMOVED AND DISPOSED OF
- CONTROLLER AND CONTROLLER CABINET SHALL BE REMOVED
- EVP SYSTEM SHALL BE REMOVED
- PUSH BUTTONS AND OTHER AUXILLARY EQUIPMENT SHALL BE REMOVED AND DISPOSED OF
- SEE SPECIAL PROVISIONS FOR DELIVERY OF SALVAGED MATERIALS
- SEE SPECIAL PROVISIONS OF DISPOSAL OF REMOVED ITEMS NOT SALVAGED

T.H. 12 AND T.H. 22
SIGNAL SYSTEM A - INPLACE REMOVAL PLAN

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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VERNON SWING
LIC. NO. 41417 DATE 11-15-2018

DESIGNED	CMK
DRAWN	CMK
CHECKED	VES

S.P. 4704-89
T.H. 12 / 22 RECONSTRUCTION
SIGNAL PLAN

SHEET 212 OF 239

NOTES:

1) LOCATION OF CONTROLLER CABINET, LOOP DETECTORS, POLE BASES AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY MN/DOT TRAFFIC PERSONNEL.
2) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
3) PEDESTRIAN INDICATIONS SHALL BE 12"x12".
4) EACH HANDHOLE SHALL BE CONCRETE HANDHOLE WITH TYPE LD COVER (EXCEPT FOR HANDHOLES 2 AND 3, WHICH SHALL HAVE CONCRETE COVERS) PER MN/DOT STANDARD PLATE NO. 8117F.
5) ALL VEHICLE SIGNAL INDICATION LENSES (CIRCULAR AND ARROW) SHALL BE GLASS LENSES.
6) SEE SPECIAL PROVISIONS FOR DEPARTMENT FURNISHED MATERIALS.
7) SEE SPECIAL PROVISIONS AND DETAILS REGARDING TYPE "D" SIGN PANELS TO BE FURNISHED AND INSTALLED BY CONTRACTOR.
8) SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING REMOVAL AND SALVAGING OF INPLACE SIGNAL SYSTEM (INCIDENTAL TO ITEM NO. 2565.511).
9) CONTRACTOR SHALL COORDINATE ALL SIGNAL WORK WITH RAILROAD AGENCY (FOR RAILROAD INTERCONNECTION).
10) (INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR UNDER SEPARATE PAY ITEMS.

(1) PA90 POLE FOUNDATION
TYPE PA90-A-35-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL - OVERHEAD
TYPE 10B - POLE MOUNTED 90°
TYPE 10B - POLE MOUNTED 180°
2 - PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4cL, R10-4cR)
LUMINAIRE - 200 WATT H.P.S. WITH PEC AND CHECK SWITCH
R10-12 SIGN PANEL-OVERHEAD (36"x48") ADJACENT TO (2-2)
TYPE "D" SIGN PANEL-OVERHEAD (72"x54") (D-2)
EXTEND INTO HH 1:
3" R.S.C.
2-12C #12
2-3C #12
1-3C #12 (LUM)

H.H. 2 TO H.H. 3:
1 1/4" RSC
1-2C #14

H.H. 1 TO H.H. 2:
4" RSC
2-12C #12
1-3C #12
1-3C #12 (LUM)
7-2C #14
2" RSC (INTERCONNECT)
1-12 PR. #19 (INTERCONNECT)

INPLACE WOOD POLE (S.O.P.) SEE (B)

1 1/4" RSC INPLACE
1-3C #12

H.H. 10 TO H.H. 14:
4" RSC
4-12C #12
3-3C #12
3-3C #12 (LUM)
8-2C #14
2" RSC (INTERCONNECT) (FOR FUTURE INTERCONNECT)

(B) S.O.P. - INPLACE WOOD POLE (LITCHFIELD PUBLIC UTILITIES)
2" R.S.C. RISER AND WEATHERHEAD
3-1C #2
EXTEND INTO H.H. 15:
2" R.S.C.
3-1C #2

INPLACE R.R. SIGNAL

EQUIPMENT PAD SEE (A)

H.H. 15 TO SERVICE CABINET ON EQUIPMENT PAD
2" R.S.C.
3-1C #2

EXTEND INPLACE 1 1/4" RSC INTO NEW HH 14

T.H. 22 (Sibley Ave.) (30 MPH)

BURLINGTON NORTHERN RAILROAD

H.H. 11 TO H.H. 12:
2" RSC
2-2C #14

H.H. 10 TO H.H. 11:
3" RSC
2-2C #14
2" RSC (INTERCONNECT)
(FOR FUTURE INTERCONNECT)

H.H. 9 TO H.H. 10:
3" RSC
2-12C #12
2-3C #12
1-3C #12 (LUM)
4-2C #14

(4) PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9(TWIN)
(DAVIT AT 135° AND 315°)
ONE WAY SIGNAL - OVERHEAD
TYPE 10B-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 180°
2 PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4cL,R10-4cR)
2-LUMINAIRES-200 WATT H.P.S. EACH WITH PEC AND CHECK SWITCH
TYPE "D" SIGN PANEL-OVERHEAD (72"x80") (D-1)
EXTEND INTO H.H. 10:
3" R.S.C.
2-12C #12
1-3C #12
2-3C #12 (LUM)

H.H. 7 TO H.H. 9:
4" RSC
2-12C #12
2-3C #12
1-3C #12 (LUM)
4-2C #14

H.H. 7 TO H.H. 8:
1 1/4" RSC
2-2 /C #14

T.H. 12 (30 MPH)

DEPOT ST. (30 MPH)

(2) PA90 POLE FOUNDATION
TYPE PA90-A-25-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL - OVERHEAD
TYPE 20C-POLE MOUNTED 270°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4cL,R10-4cR)
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
TYPE "D" SIGN PANEL-OVERHEAD (72"x54") (D-3)
EXTEND INTO H.H. 4:
3" R.S.C.
2-12C #12
1-3C #12
1-3C #12 (LUM)

H.H. 2 TO H.H. 4:
4" RSC
2-12C #12
1-3C #12
1-3C #12 (LUM)
4-2C #14
2" RSC (INTERCONNECT)
1-12 PR. #19 (INTERCONNECT)

H.H. 4 TO H.H. 5:
2" RSC
4-2C #14
1-12 PR. #19 (INTERCONNECT)

H.H. 5 TO H.H. 6:
2" RSC INPLACE
2-2C #14
1-12 PR. #19 (INTERCONNECT)

H.H. 6 TO H.H. 9 (SYSTEM "B"):
2" RSC INPLACE
1-12 PR. #19 (INTERCONNECT)

T.H. 12/22 (Sibley Ave) (30 MPH)

(3) PA90 POLE FOUNDATION
TYPE PA90-A-25-D40-9 (DAVIT AT 350°)
ONE WAY SIGNAL - OVERHEAD
TYPE 10B-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 180°
2-PEDESTRIAN PUSH BUTTONS AND SIGNS (R10-4cL)
LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH
R10-12 SIGN PANEL-OVERHEAD(36"x48")ADJACENT TO (6-2)
TYPE "D" SIGN PANEL-OVERHEAD (72"x60") (D-4)
EXTEND INTO H.H. 7:
3" R.S.C.
2-12C #12
2-3C #12
1-3C #12 (LUM)

(A) EQUIPMENT PAD - SEE DETAILS
SERVICE CABINET
EXTEND INTO H.H. 14:
2" R.S.C.
5-3C #12 (LUM)
BETWEEN H.H. 1 AND H.H. 14:
2" R.S.C.
2-3C #12 (LUM)

INSTALL CONTROLLER AND CABINET (FURNISHED BY DEPARTMENT)
EXTEND INTO H.H. 1:
4" R.S.C.
4-12C #12
3-3C #12
7-2C #14
2" R.S.C. (INTERCONNECT)
1-12 PR. #19 (INTERCONNECT)
EXTEND INTO H.H. 14:
4" R.S.C.
4-12C #12
4-3C #12
8-2C #14
2" R.S.C. (INTERCONNECT) (FOR FUTURE INTERCONNECT)

BETWEEN SERVICE CABINET AND CONTROLLER CABINET:
2" R.S.C.
2-1C #6
1-1C #6 BR. GR.

1" RSC STUB OUT OF CONTROLLER CABINET (THREAD AND CAP BOTH ENDS)

MATCH LINE STA. 9+88

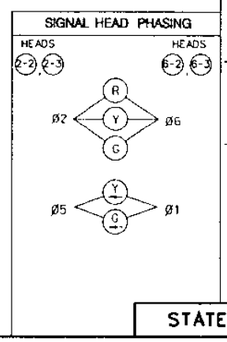
SEE SHEET 17

LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	20' & 50'	1
D1-2	2-6x6	5' & 35'	1
D2-1	6x6	140'	1
D2-2	6x6	140'	3
D4-1	6x6	120'	1
D4-2	6x6	120'	1
D4-3	2-6x6	5' & 20'	7
D4-4	2-6x6	5' & 20'	1
D5-1	2-6x6	20' & 50'	1
D5-2	2-6x6	5' & 35'	1
D6-1	6x6	120'	1
D6-2	6x6	110'	3
D8-1	6x6	120'	1
D8-2	2-6x6	5' & 20'	7
D8-3	2-6x6	5' & 20'	1

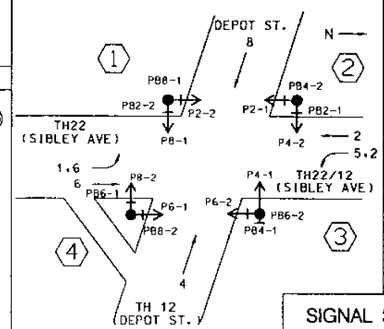
FUNCTIONS:
1) CALL AND EXTEND
3) EXTEND ONLY
7) DELAYED CALL, IMMEDIATE EXTEND

NOTE: LOCATION - DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

SIGNAL HEAD PHASING



CONTROLLER PHASING, PED. INDICATIONS AND PUSH BUTTONS



SIGNAL FACES							
FACE	PHASE	FLASH	INDICATION SIZE (INCHES) R	Y	G	YLTA	GLTA
2-1	2	R	12	12	12		
2-2	5,2	R	12	12	12	12	12
2-3	5,2	R	12	12	12	12	12
4-1	4	R	12	12	12		
4-2	4	R	12	12	12		
4-3	4	R	12	12	12		
6-1	6	R	12	12	12		
6-2	1,6	R	12	12	12	12	12
6-3	1,6	R	12	12	12	12	12
8-1	8	R	12	12	12		
8-2	8	R	12	12	12		
8-3	8	R	12	12	12		

SIGNAL SYSTEM "A" - T.H. 12/22 (SIBLEY AVE.) at T.H. 12 (DEPOT ST.) INTERSECTION LAYOUT

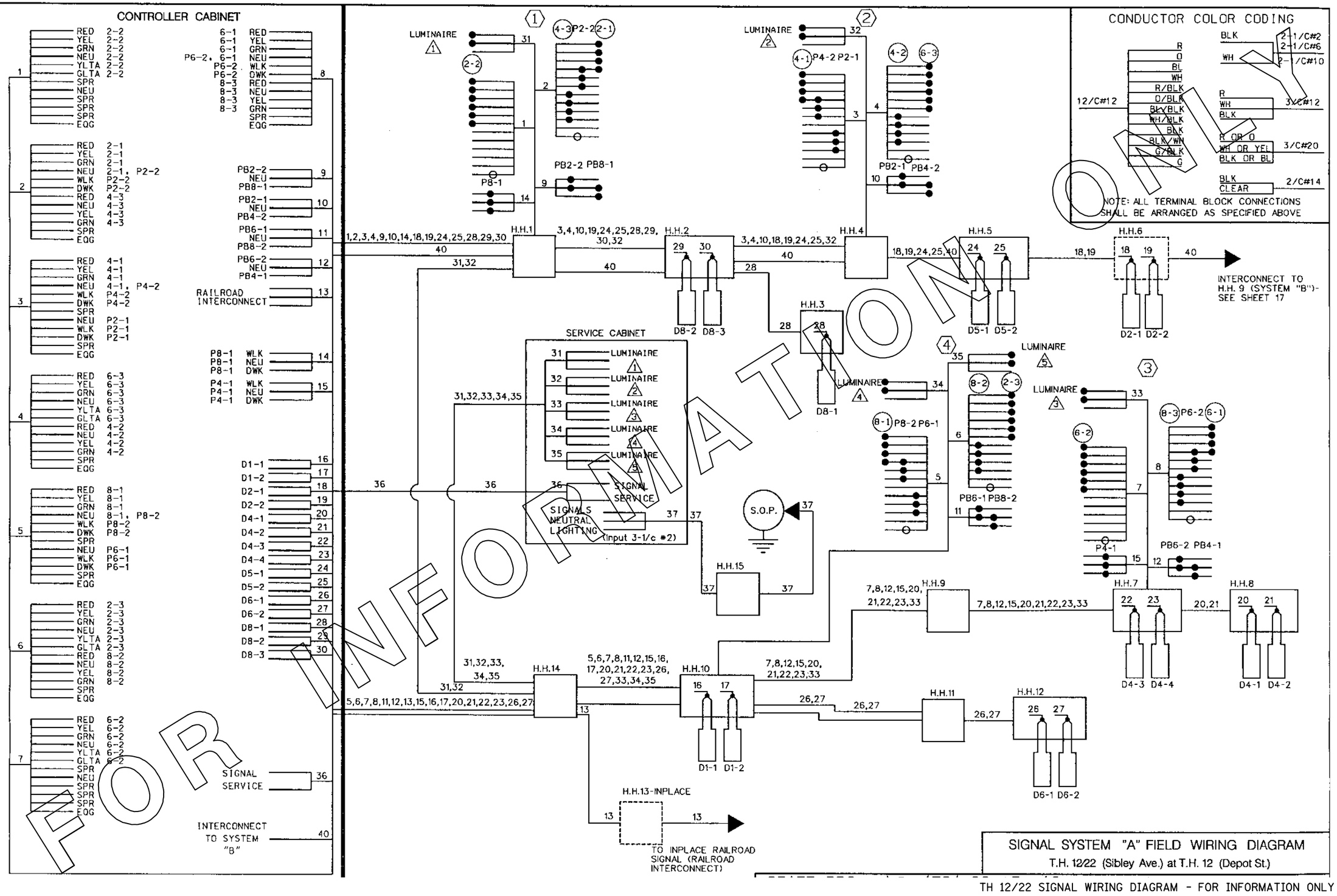
STATE PROJ NO 4704-39 (TH 12) SHEET NO 15 OF 33 SHEETS

TH 12/22 SIGNAL LAYOUT - FOR INFORMATION ONLY

FOR INFORMATION ONLY

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STATE PROJ. NO. S.P. 4704-89 SHEET NO. 213 OF 239 SHEETS



SIGNAL SYSTEM "A" FIELD WIRING DIAGRAM

T.H. 12/22 (Sibley Ave.) at T.H. 12 (Depot St.)

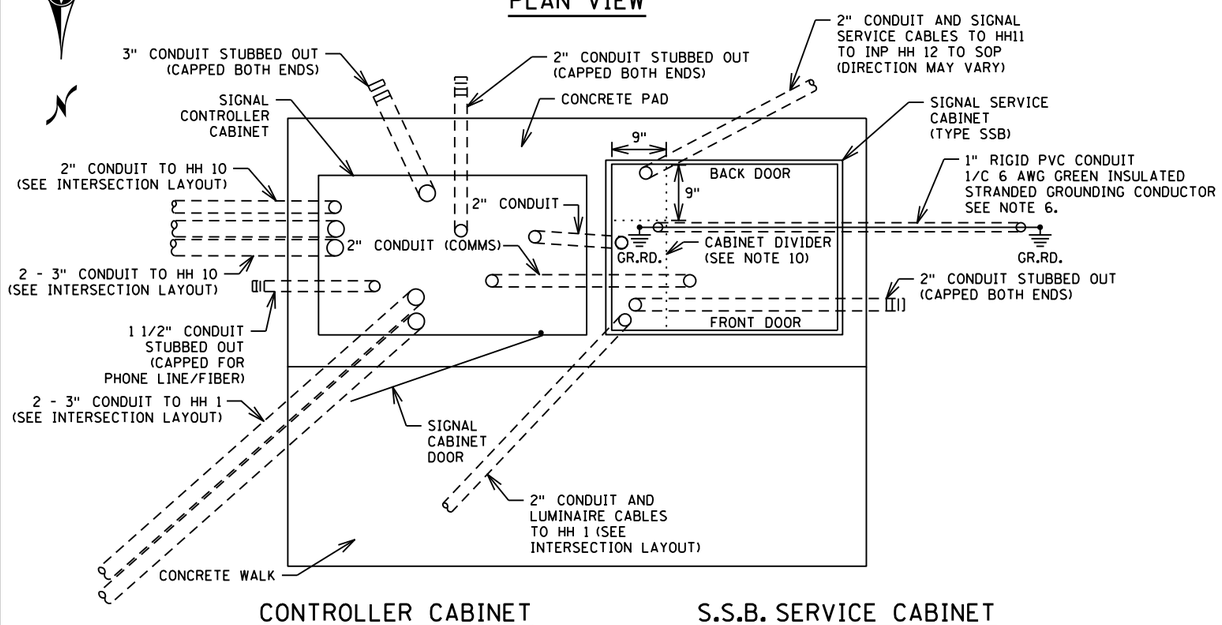
TH 12/22 SIGNAL WIRING DIAGRAM - FOR INFORMATION ONLY

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1/29/2019

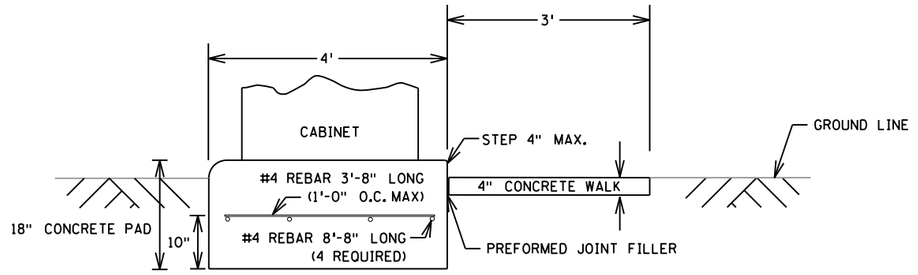
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

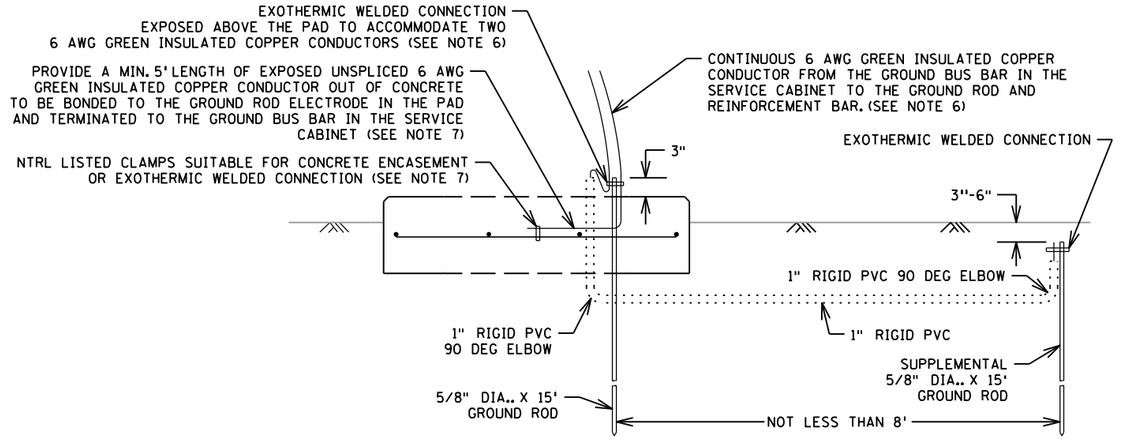
PLAN VIEW



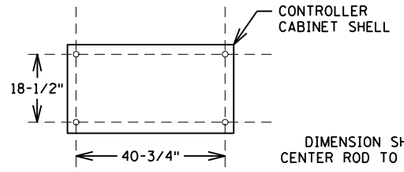
SIDE VIEW



GROUNDING ELECTRODE SYSTEM

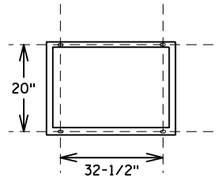


CONTROLLER CABINET TYPE "P" & "R" BOLT PATTERN

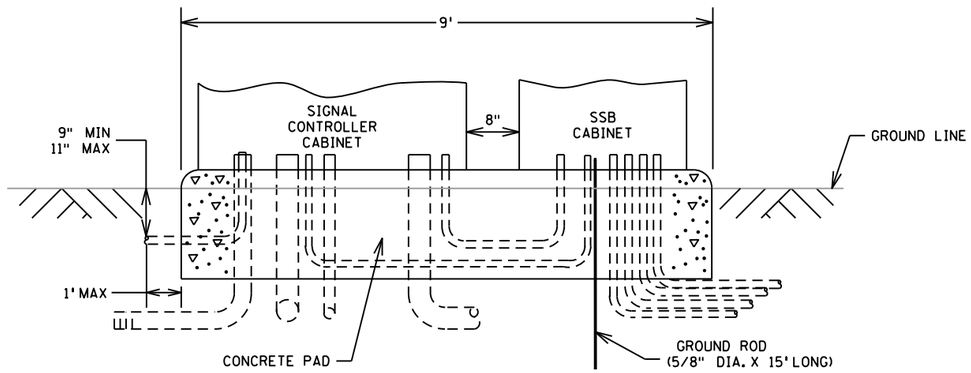


DIMENSION SHOWN ARE CENTER ROD TO CENTER ROD

S.S.B. SERVICE CABINET BOLT PATTERN



FRONT VIEW



T.H. 12/22 (SIBLEY AVE) AND 3RD ST.
SIGNAL SYSTEM B - CABINET DETAILS

NOTES:

1. THE DEPARTMENT WILL FURNISH THE ANCHOR RODS, NUTS, WASHERS AND RUBBER GASKET FOR THE CONTROLLER CABINET.
2. BEVEL OR CHAMFER A 1/2 IN RADIUS ON THE OUTER EDGE OF THE PAD AND CONCRETE WALK.
3. CAP THE TOP OF THE CONDUITS AFTER PLACEMENT UNTIL CABLES ARE PLACED.
4. PROJECT THE CONDUIT 2" TO 3 " ABOVE THE CONCRETE.
5. USE CONCRETE MIX 3F52.
6. SUPPLY TWO 15 FOOT GROUND ROD ELECTRODES IN ACCORDANCE WITH 2545.3R. PROVIDE ONE GROUND ROD IN THE EQUIPMENT PAD IN ACCORDANCE WITH 2545.3 F.3 AND THE OTHER OUTSIDE OF THE PAD WITH A MINIMUM OF 8 FEET OF SEPARATION BETWEEN ELECTRODES. BOND THE TWO GROUND RODS TOGETHER WITH ONE CONTINUOUS LENGTH UNSPLICED CONDUCTOR FROM THE OUTER MOST GROUND ROD TO THE GROUND BUS BAR IN THE CABINET. EXOTHERMICALLY WELD THE 6 AWG STRANDED GREEN INSULATED CONDUCTOR TO THE GROUND RODS. PLACE THE BONDING CONNECTION TO THE EQUIPMENT PAD GROUND ROD ABOVE THE CONCRETE. APPLY DE-OX COMPOUND TO THE GROUNDING CONNECTIONS AFTER FINAL ASSEMBLY.
7. BOND A 6 AWG GREEN INSULATED GROUNDING CONDUCTOR TO THE REINFORCEMENT BAR MAT BEFORE CONCRETE POURING OPERATIONS. ENSURE THE CONDUCTOR IS PLACED IN THE LOAD SIDE OF THE CABINET. TERMINATE THE GREEN INSULATED 6 AWG GROUND CONDUCTOR ON THE GROUND BUS IN THE SERVICE CABINET WITHOUT SPLICES.
8. ENSURE CONDUIT WITHIN THE PAD FROM ONE CABINET TO ANOTHER IS FULLY ENCASED IN CONCRETE.
9. PLACE THE CONDUITS AS DIRECTED BY THE ENGINEER. ENSURE THE CONDUITS DO NOT INTERFERE WITH THE SUPPORTING MEMBERS OR DIVIDERS OF THE CABINET.
10. ENSURE CONDUITS ARE PLACED TO THE LEFT OF THE DIVIDER AS SHOWN ON THE DETAIL.
11. PLACE ANCHOR RODS AS SHOWN ON THE DETAIL AND PROJECT 3 IN TO 4 IN ABOVE THE CONCRETE.
12. CENTER THE CABINETS ON THE PAD (LEFT & RIGHT) AS SHOWN ON THE DETAIL.
13. CENTER REINFORCEMENT BAR MAT IN CONCRETE PAD.

SYSTEM ID: 1735070
METER ADDRESS:
TE: 10994

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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REV.	BY	DATE

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JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED	DRAWN	CHECKED
MSL	MSL	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 215 OF 239

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SIGNAL HEAD CHART

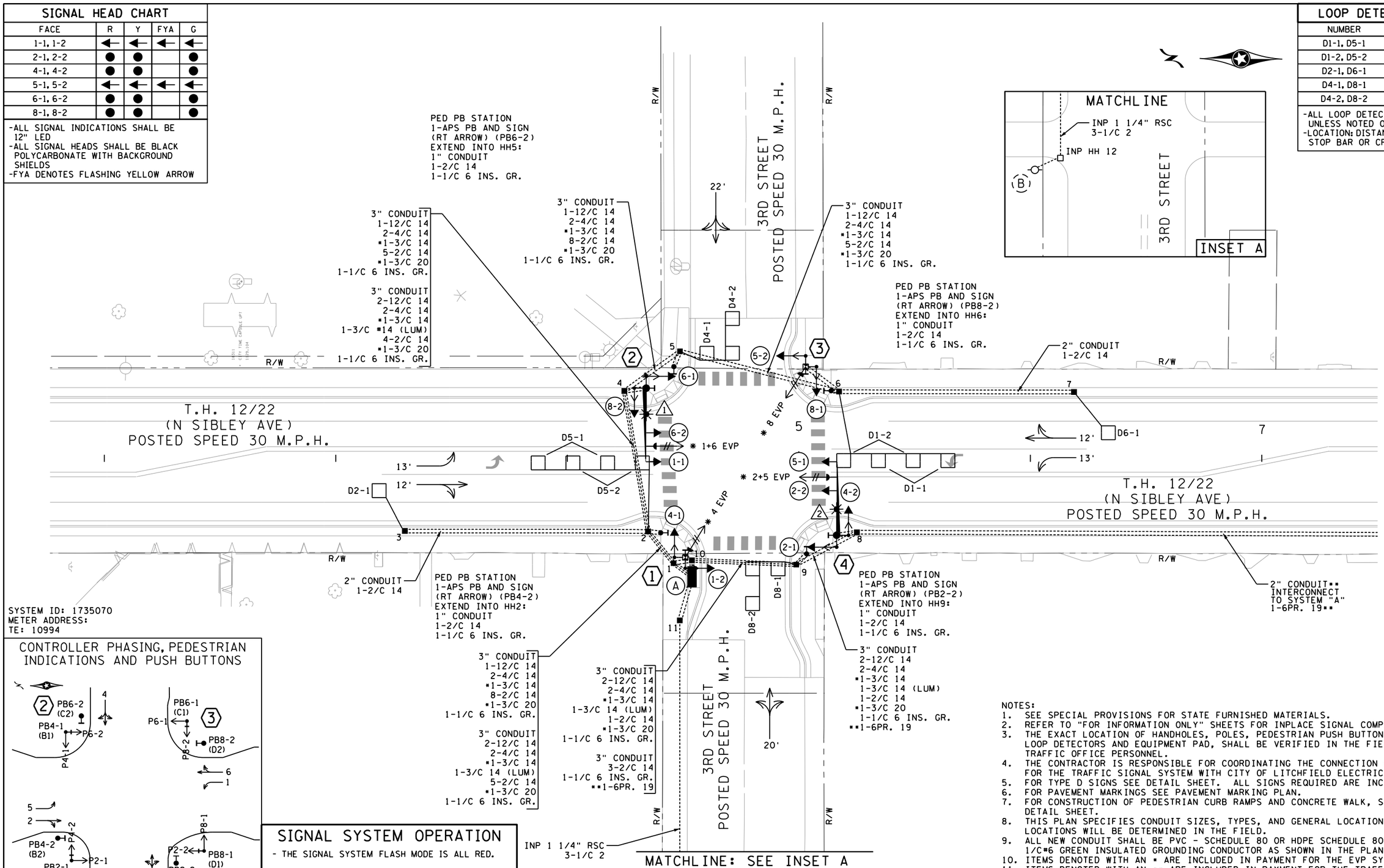
FACE	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2	●	●		●
4-1, 4-2	●	●		●
5-1, 5-2	←	←	←	←
6-1, 6-2	●	●		●
8-1, 8-2	●	●		●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW

LOOP DETECTOR CHART

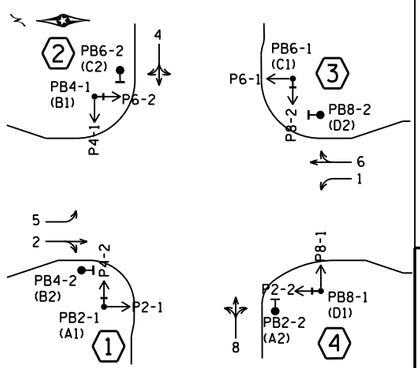
NUMBER	SIZE (FT)	LOCATION
D1-1, D5-1	2-6x6	20 & 50
D1-2, D5-2	2-6x6	5 & 35
D2-1, D6-1	6x6	120
D4-1, D8-1	6x6	5 & 20
D4-2, D8-2	6x6	5

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE
-LOCATION: DISTANCE FROM STOP BAR OR CROSSWALK IN FEET



SYSTEM ID: 1735070
METER ADDRESS:
TE: 10994

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

NOTES:
1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
2. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
3. THE EXACT LOCATION OF HANDHOLES, POLES, PEDESTRIAN PUSH BUTTON STATIONS, LOOP DETECTORS AND EQUIPMENT PAD, SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM WITH CITY OF LITCHFIELD ELECTRIC UTILITY COMPANY.
5. FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCIDENTAL.
6. FOR PAVEMENT MARKINGS SEE PAVEMENT MARKING PLAN.
7. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS AND CONCRETE WALK, SEE INTERSECTION DETAIL SHEET.
8. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.
9. ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C #6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
10. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
11. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 12/22 (SIBLEY AVE) AND 3RD ST.
SIGNAL SYSTEM B - LAYOUT

SCALE 0 20 40 FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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JACOB J. BONGARD
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DRAWN	MSL
CHECKED	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 216 OF 239

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INTERSECTION NOTES

(A) EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB) NO BATTERY BACKUP SYSTEM OR BATTERIES
CONTROLLER CABINET (STATE FURNISHED)

3" CONDUIT TO HH1:	3" CONDUIT TO HH1:
1-12/C 14	2-12/C 14
2-4/C 14	2-4/C 14
*1-3/C 14 (EVP)	*1-3/C 14 (EVP)
*1-3/C 20 (EVP)	*1-3/C 20 (EVP)
8-2/C 14	5-2/C 14
1-1/C 6 INS. GR	1-1/C 6 INS. GR
3" CONDUIT TO HH10:	3" CONDUIT TO HH10:
1-12/C 14	2-12/C 14
2-4/C 14	2-4/C 14
*1-3/C 14 (EVP)	*1-3/C 14 (EVP)
*1-3/C 20 (EVP)	*1-3/C 20 (EVP)
3-2/C 14	2-2/C 14
1-1/C 6 INS. GR	1-1/C 6 INS. GR
	**1-6PR. 19 (INTERCONNECT)

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD
2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)
CONTROLLER CABINET TO SERVICE CABINET:
2" CONDUIT
3-1/C 6
CONTROLLER CABINET TO SERVICE CABINET (COMMS):
2" CONDUIT
3-1/C 6
CONTROLLER CABINET TO HH 10:
**2" CONDUIT
**1-6PR. 19 (INTERCONNECT)
SERVICE CABINET TO HH 1:
2" CONDUIT
3-1/C 2
SERVICE CABINET TO HH 1:
2" CONDUIT
2-3/C 14 (LUM)
SERVICE CABINET TO EXTERNAL GR. RD.
1" CONDUIT
1-1/C 6 INS. GR.
(SEE EQUIPTMENT PAD LAYOUT)
HH 1 TO HH 10:
2" CONDUIT
1-3/C 14 (LUM)

(B) INP. S.O.P.
INP. GROUND MOUNTED TRANSFORMER
INP. 1 1/4" RSC FROM SOP TO INP HH 12
3-1/C 2
INP. 1 1/4" RSC FROM INP HH 12 TO HH11
3-1/C 2
2" CONDUIT FROM HH 11 TO SERVICE CABINET
3-1/C 2

(2) PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 0 DEG)
1-ANGLE MOUNT OVERHEAD AT 0'
1-STRAIGHT MOUNT OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED HEADS
AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 1+6)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-R10-X12 SIGN ADJACENT TO HEAD 1-1
1-TYPE D SIGNS (D-1) (SEE SIGN DETAILS)
1-APS PB & SIGN (LT ARROW)(PB4-1) W/
APS PUSH BUTTON POLE MOUNT ADAPTOR

3" CONDUIT TO HH 4:
2-12/C 14
2-4/C 14
*1-3/C 14 (EVP)
1-3/C 14 (LUM)
*1-3/C 20 (EVP)
1-2/C 14
1-1/C 6 INS. GR.

(1) PEDESTAL FOUNDATION
13' PEDESTAL POLE PLUS BASE
2-STRAIGHT MOUNT SIGNALS
AT 90 AND 180 DEG
2-STRAIGHT MOUNT C.D. PED HEAD
AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 4)
1-APS PB & SIGN (LT ARROW)(PB2-1)
AND APS PB MOUNTING SPACERS

3" CONDUIT TO HH 10:
1-12/C 14
2-4/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-2/C 14
1-1/C 6 INS. GR.

(3) PEDESTAL FOUNDATION
13' PEDESTAL POLE PLUS BASE
2-STRAIGHT MOUNT SIGNALS
AT 90 AND 180 DEG
2-STRAIGHT MOUNT C.D. PED HEAD
AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 8)
1-APS PB & SIGN (LT ARROW)(PB6-1)
AND APS PB MOUNTING SPACERS

3" CONDUIT TO HH 6:
1-12/C 14
2-4/C 14
*1-3/C 14 (EVP)
*1-3/C 20 (EVP)
1-2/C 14
1-1/C 6 INS. GR.

(4) PA90 POLE FOUNDATION
TYPE PA90-A-30-D40-9 (DAVIT AT 0 DEG)
1-ANGLE MOUNT OVERHEAD AT 0'
1-STRAIGHT MOUNT OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS 90 AND 180 DEG
2-ANGLE MOUNT C.D. PED HEADS
AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASES 2+5)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-R10-X12 SIGN ADJACENT TO HEAD 5-1
1-TYPE D SIGNS (D-1) (SEE SIGN DETAILS)
1-APS PB & SIGN (LT ARROW)(PB8-1) W/
APS PUSH BUTTON POLE MOUNT ADAPTOR

3" CONDUIT TO HH 8:
2-12/C 14
2-4/C 14
*1-3/C 14 (EVP)
1-3/C 14 (LUM)
*1-3/C 20 (EVP)
1-2/C 14
1-1/C 6 INS. GR.

NOTES:
1. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
2. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 12/22 (SIBLEY AVE) AND 3RD ST.
SIGNAL SYSTEM B - POLE NOTES

SYSTEM ID: 1735070
METER ADDRESS:
TE: 10994

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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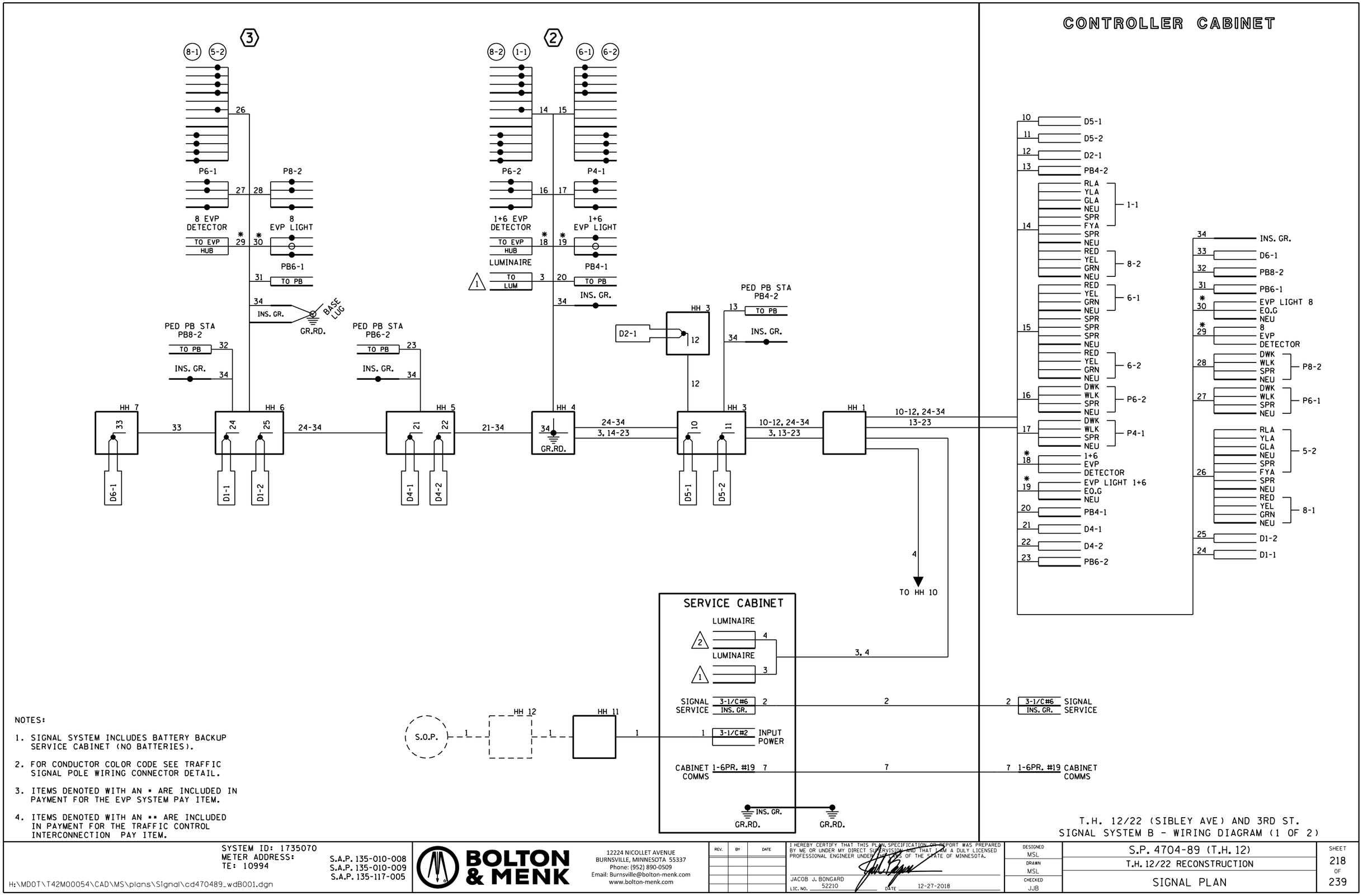
JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED	MSL
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CHECKED	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 217 OF 239

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NOTES:

1. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET (NO BATTERIES).
2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
3. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
4. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 12/22 (SIBLEY AVE) AND 3RD ST.
SIGNAL SYSTEM B - WIRING DIAGRAM (1 OF 2)

SYSTEM ID: 1735070
METER ADDRESS:
TE: 10994

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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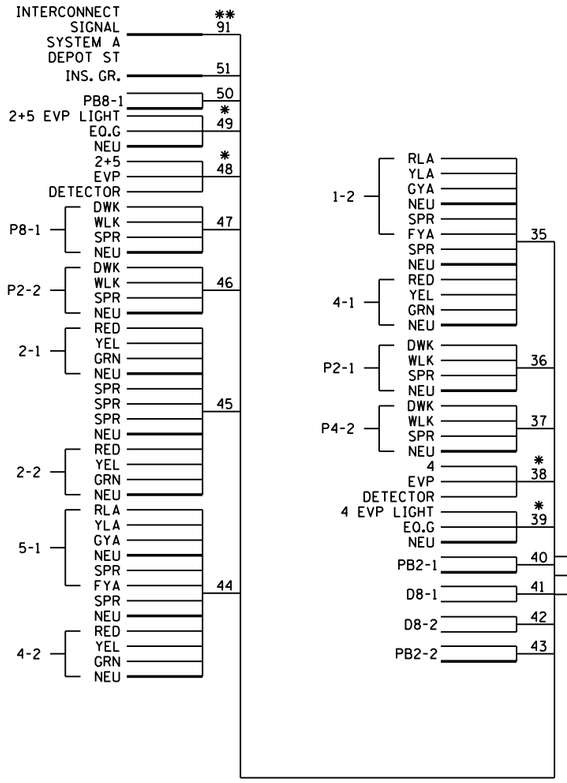
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CHECKED	JJB

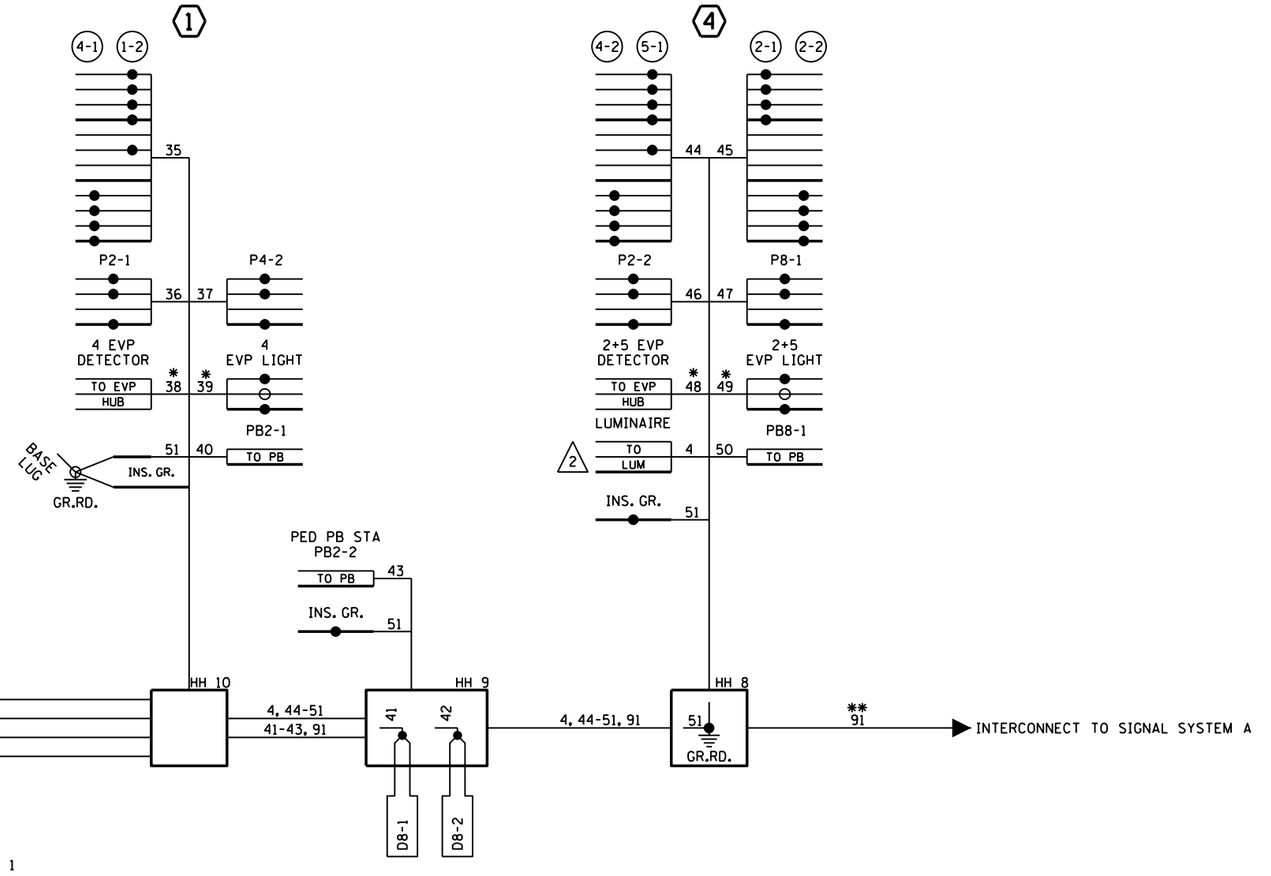
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T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 218 OF 239

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CONTROLLER CABINET





NOTES:

1. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET (NO BATTERIES).
2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
3. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
4. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 12/22 (SIBLEY AVE) AND 3RD ST.
SIGNAL SYSTEM B - WIRING DIAGRAM (2 OF 2)

SYSTEM ID: 1735070
METER ADDRESS:
TE: 10994

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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SIGNAL PLAN

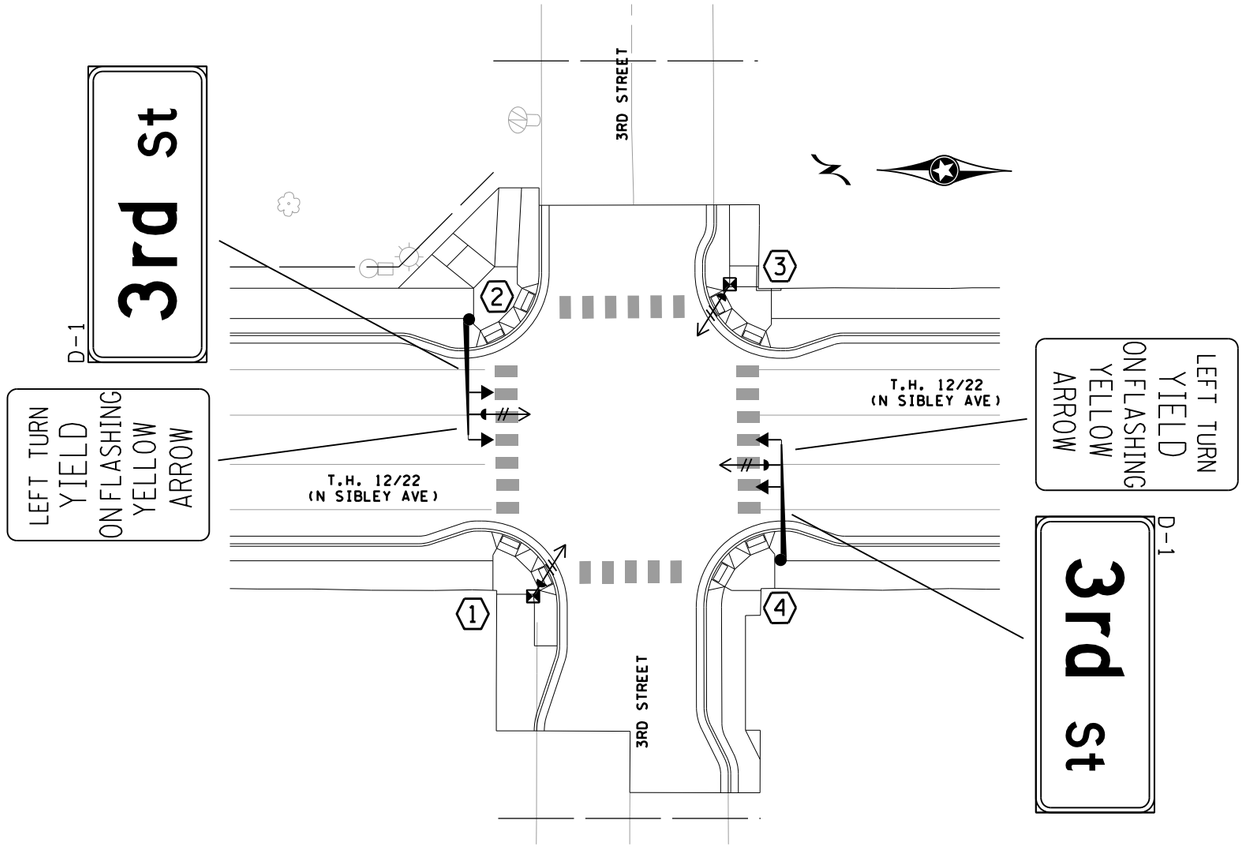
SHEET 219 OF 239

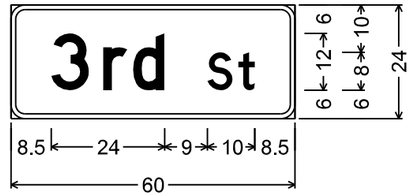
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MAST ARM MOUNTED SIGNS

SIGN PANEL OR SIGN NO.	POLE NO.	a (FEET)	SIZE (INCHES)	MOUNTING BRACKET NUMBER	MOUNTING BRACKET SPACING (1)	AREA/ SIGN (SQ. FT.)	NO. REQ.
R10-X12	2	0	42 X 48	2	30	14	1
D-1	2	15	60 X 24	3	24	10	1
R10-X12	4	0	42 X 48	2	30	14	1
D-1	4	15	60 X 24	3	24	10	1
					TOTAL	48	

SPECIFIC NOTE:
(1) SPACING BETWEEN STRIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED. SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 1/1/03) FOR BRACKET SPACING REQUIREMENTS.

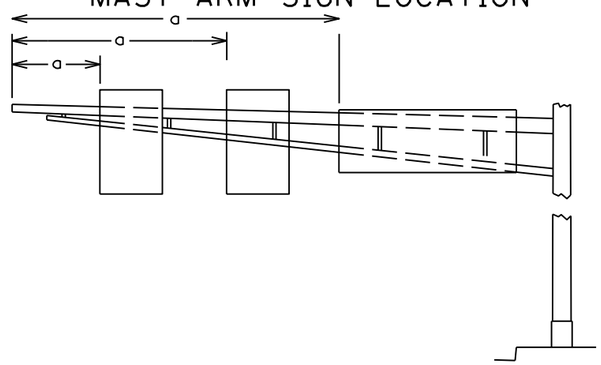




D-1; 3.0" Radius, 1.0" Border, White on Green; [3rd St] D;
Table of letter and object lefts.

3	r	d	S	t
8.5	19.5	25.8	41.5	48.0

MAST ARM SIGN LOCATION



GENERAL NOTES:
1. CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
2. TYPE D SIGN PANELS EXTENDING BEYOND THE BORDER MAY BE TRIMMED.
3. FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL PAGE 105A.
4. FOR TYPE "D" STRINGER AND PANEL DETAILS, SEE STANDARD SIGNS MANUAL PAGE 105A.
5. THE MAST ARM MOUNTED SIGNS ARE INCIDENTAL.
6. ALL SIGN DIMENSIONS ARE IN INCHES.

SYSTEM ID: 1735070
METER ADDRESS:
TE: 10994

T.H. 12/22 (SIBLEY AVE) AND 3RD ST.
SIGNAL SYSTEM B - MAST ARM SIGNING

0 20 40
SCALE FEET

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T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

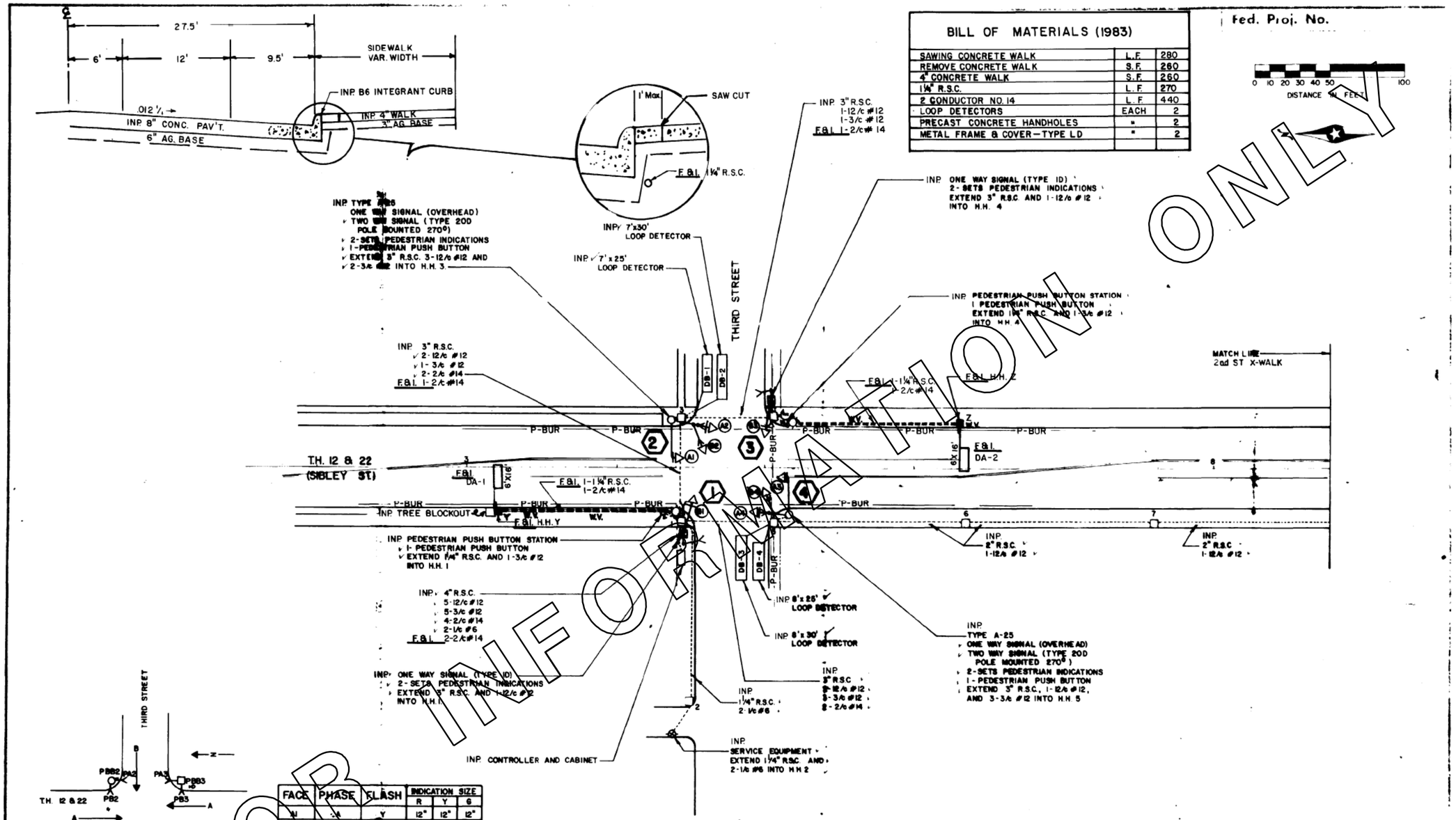
SHEET 220 OF 239

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BILL OF MATERIALS (1983)		
SAWING CONCRETE WALK	L.F.	280
REMOVE CONCRETE WALK	S.F.	260
4" CONCRETE WALK	S.F.	260
1¼" R.S.C.	L.F.	270
2 CONDUCTOR NO. 14	L.F.	440
LOOP DETECTORS	EACH	2
PRECAST CONCRETE HANDHOLES	"	2
METAL FRAME & COVER — TYPE LD	"	2

Fed. Proj. No.

0 10 20 30 40 50 100
DISTANCE IN FEET



FACE	PHASE	FLASH	INDICATION SIZE R	Y	G
A1	A	Y	12"	12"	12"
A2	A	Y	12"	12"	12"
A3	A	Y	12"	12"	12"
A4	A	Y	12"	12"	12"
B1	B	R	12"	12"	12"
B2	B	R	12"	12"	12"
B3	B	R	12"	12"	12"
B4	B	R	12"	12"	12"

FOR INFORMATION ONLY

REVISED
SYSTEM "B"
INTERSECTION LAYOUT
TH 12 & 22 (SIBLEY ST) AND 3rd ST

I.D. NO. 47020012*100.458*

4704-35
~~4704-26~~ (T.H. 12=10)

T.H. 12/22 (SIBLEY AVE) AND 3RD ST.
SIGNAL SYSTEM B - INPLACE REMOVAL PLAN

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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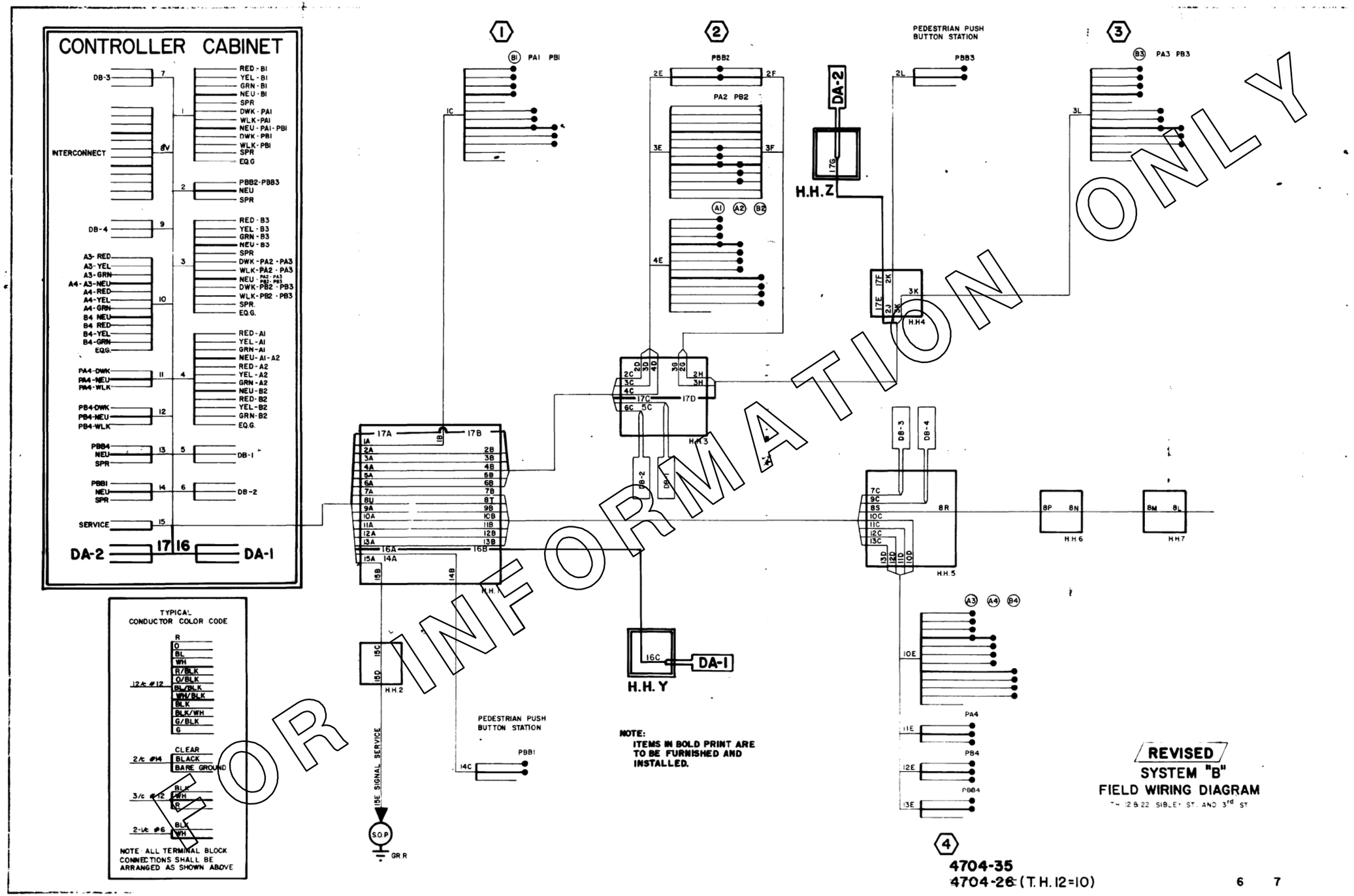
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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 221 OF 239

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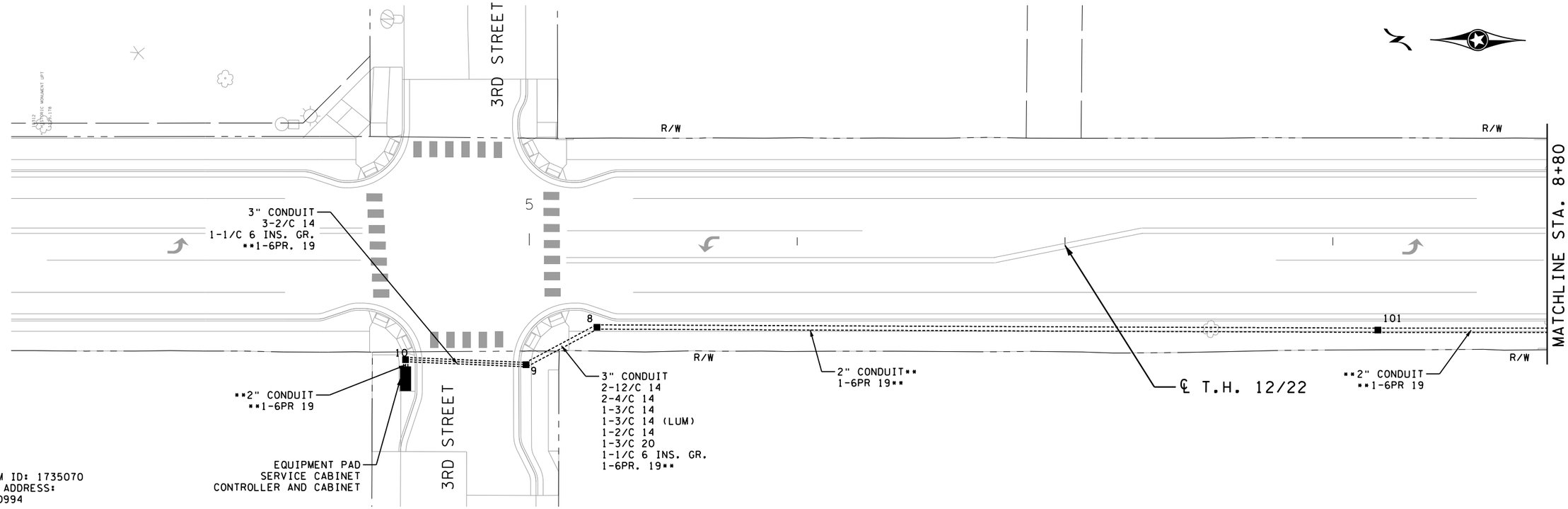


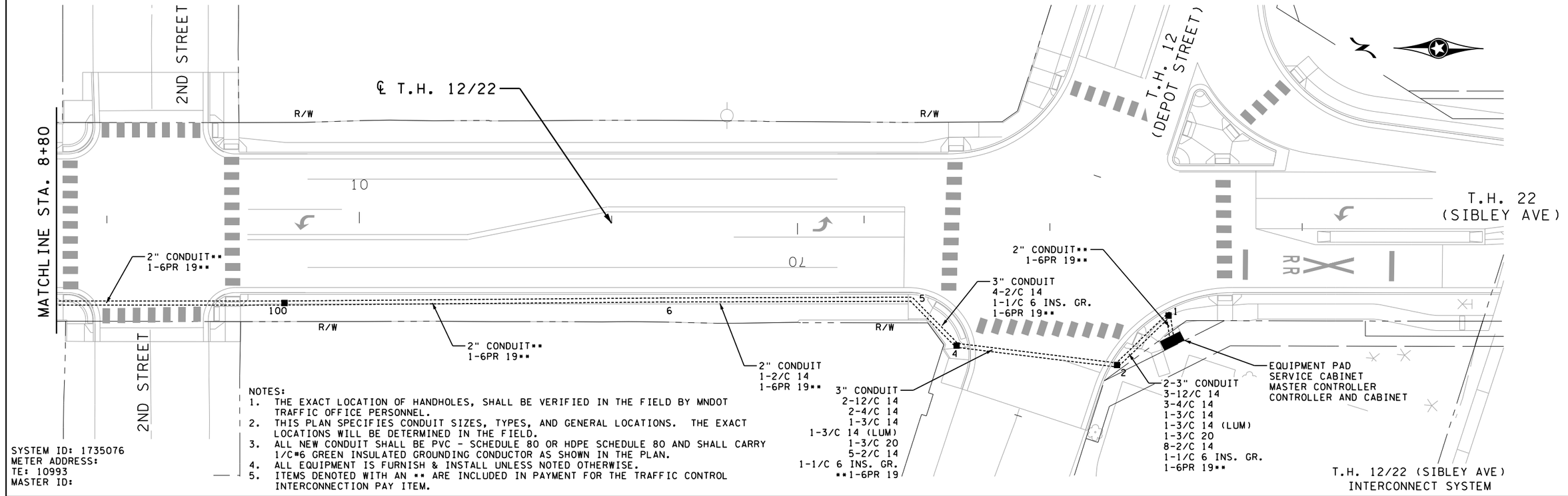
T.H. 12/22 (SIBLEY AVE) AND 3RD ST.
SIGNAL SYSTEM B - FOR INFORMATION ONLY

S.A.P. 135-010-008 S.A.P. 135-010-009 S.A.P. 135-117-005	BOLTON & MENK 12224 NICOLLET AVENUE BURNSVILLE, MINNESOTA 55337 Phone: (952) 890-0509 Email: Burnsville@bolton-menk.com www.bolton-menk.com	REV. / BY / DATE	S.P. 4704-89 (T.H. 12) T.H. 12/22 RECONSTRUCTION SIGNAL PLAN	SHEET 222 OF 239

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NOTES:
1. THE EXACT LOCATION OF HANDHOLES, SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
2. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.
3. ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
4. ALL EQUIPMENT IS FURNISH & INSTALL UNLESS NOTED OTHERWISE.
5. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 12/22 (SIBLEY AVE)
INTERCONNECT SYSTEM

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SCALE FEET

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

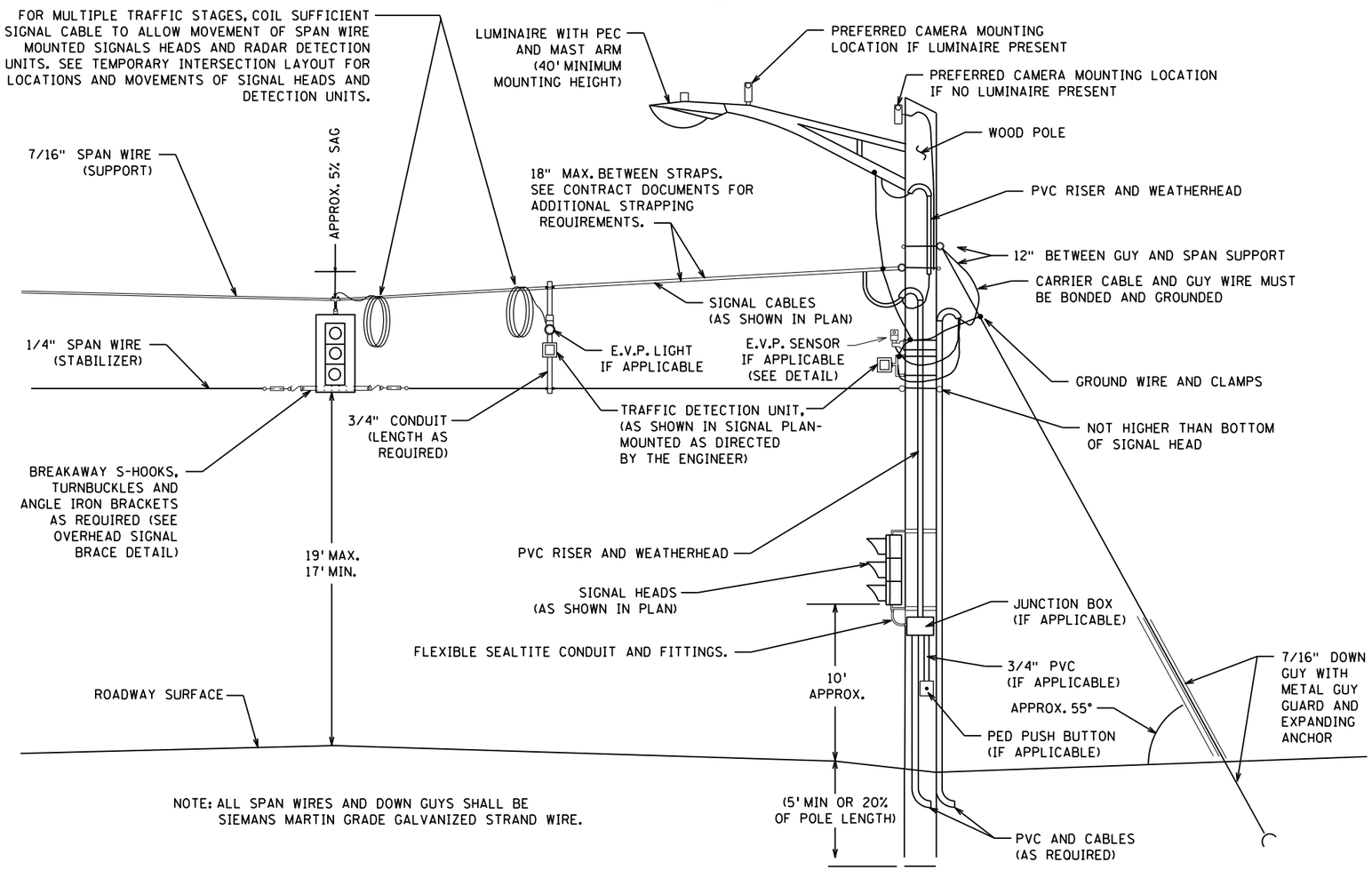
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DRAWN	MSL
CHECKED	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
SIGNAL PLAN

SHEET 223 OF 239

TYPICAL WOOD POLE AND SPAN WIRE MOUNTED TRAFFIC SIGNALS

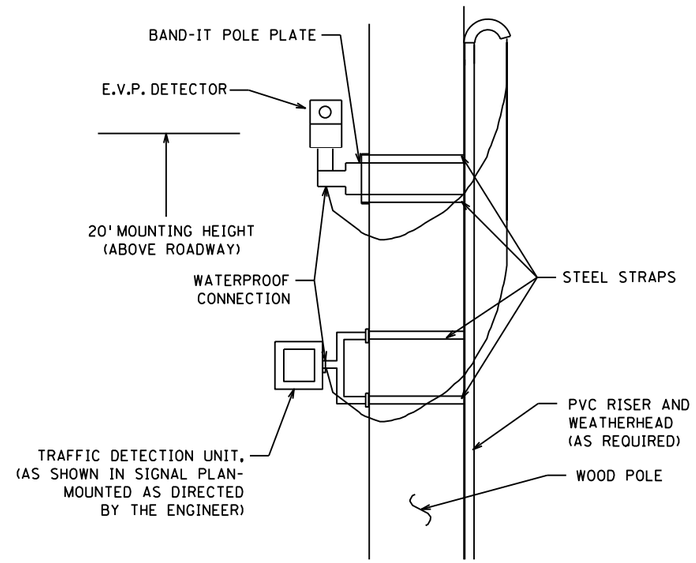
(NOT TO SCALE)



NOTE: ALL SPAN WIRES AND DOWN GUYS SHALL BE SIEMANS MARTIN GRADE GALVANIZED STRAND WIRE.

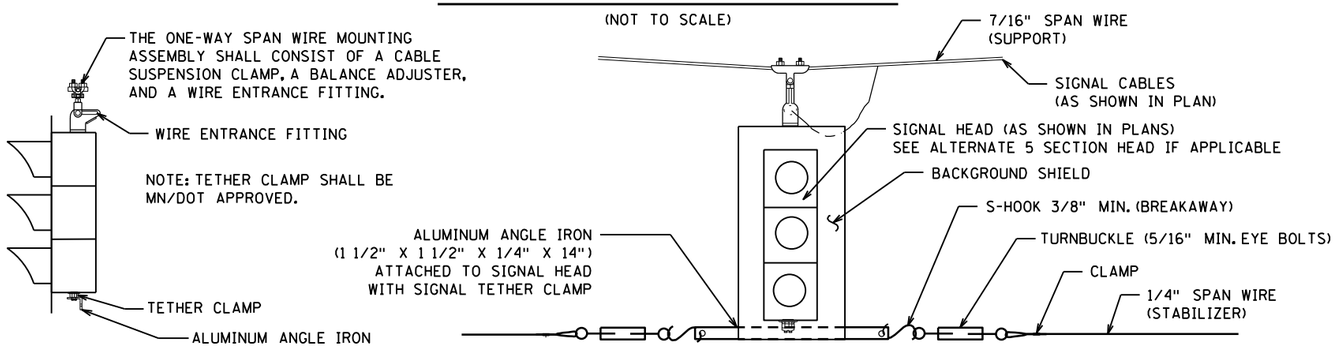
E.V.P. OR TRAFFIC DETECTOR WOOD POLE MOUNT

(NOT TO SCALE)



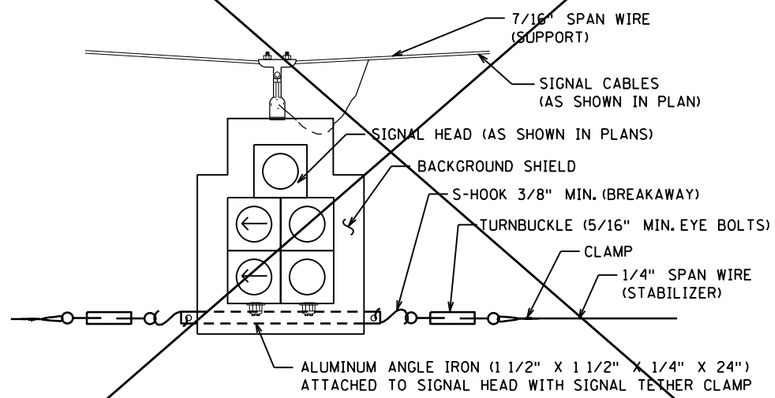
OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



5 SECTION HEAD OVERHEAD SIGNAL BRACE DETAIL

(NOT TO SCALE)



02-2018

T.H. 12 AND C.R. 34
TEMPORARY SIGNAL SYSTEM - DETAILS

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED	MSL
DRAWN	MSL
CHECKED	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
TEMPORARY SIGNAL PLAN

SHEET 224 OF 239

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SIGNAL HEAD CHART

FACE	R	Y	G	FYA	G
2-1, 2-2	●	●	●		
4-1, 4-2, 4-3	●	●	●		
5-1, 5-2	←	←		←	←
6-1, 6-2, 6-3	●	●	●		

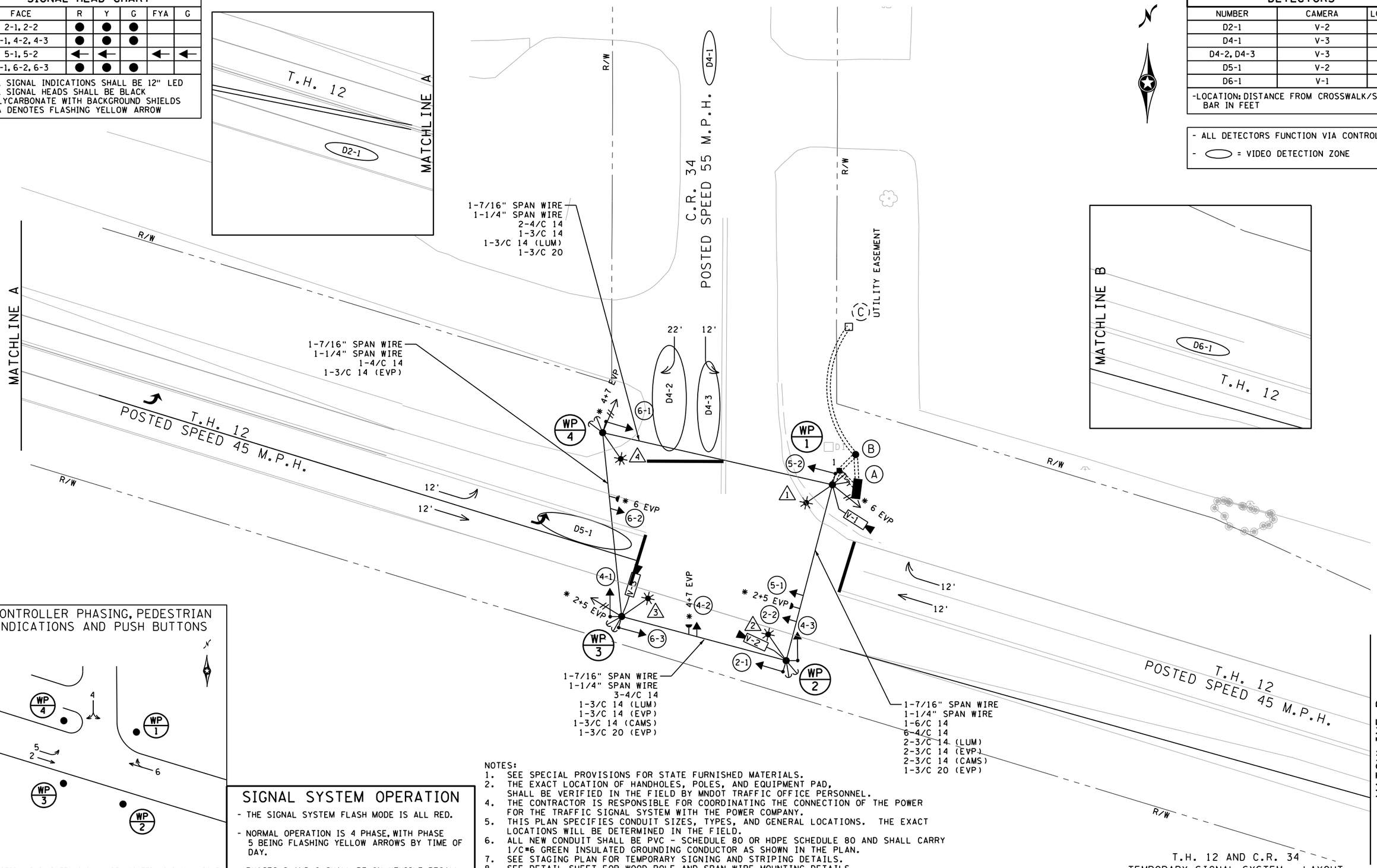
-ALL SIGNAL INDICATIONS SHALL BE 12" LED
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
-FYA DENOTES FLASHING YELLOW ARROW

DETECTORS

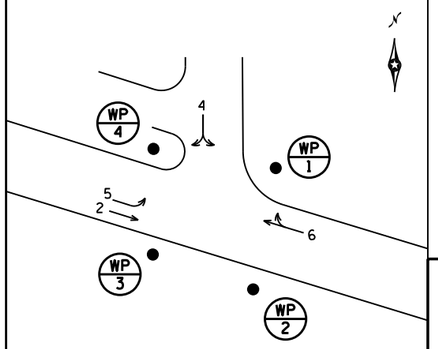
NUMBER	CAMERA	LOCATION
D2-1	V-2	300'
D4-1	V-3	180'
D4-2, D4-3	V-3	5'
D5-1	V-2	5'
D6-1	V-1	300'

-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

- ALL DETECTORS FUNCTION VIA CONTROLLER
- ⬭ = VIDEO DETECTION ZONE



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE, WITH PHASE 5 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

NOTES:
1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
2. THE EXACT LOCATION OF HANDHOLES, POLES, AND EQUIPMENT PAD, SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM WITH THE POWER COMPANY.
5. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.
6. ALL NEW CONDUIT SHALL BE PVC - SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
7. SEE STAGING PLAN FOR TEMPORARY SIGNING AND STRIPING DETAILS.
8. SEE DETAIL SHEET FOR WOOD POLE AND SPAN WIRE MOUNTING DETAILS.

T.H. 12 AND C.R. 34
TEMPORARY SIGNAL SYSTEM - LAYOUT

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2/8/2019

0 20 40
SCALE FEET

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED	MSL
DRAWN	MSL
CHECKED	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
TEMPORARY SIGNAL PLAN

SHEET 225 OF 239

INTERSECTION NOTES

WP 4

50' WOOD POLE
2-DOWN GUY, GUARD AND ANCHOR
1-TYPE 10A-WOOD POLE MOUNTED AT 180 DEG
1-ONE WAY EVP DETECTOR (PHASE 4+7) POLE MOUNTED
15' MAST ARM AND LUMINAIRE (LED)
WITH PEC.
2-R9-3 SIGNS AT 0 AND 270 DEG
METAL JUNCTION BOX WITH TERMINAL BLOCK

1-3" CONDUIT ABOVE JUNCTION BOX TO SPAN
WIRES WITH:
1-4/C 14
1-3/C 20

1-1" CONDUIT RISER AND WEATHERHEAD ABOVE
SPAN WIRE WITH:
1-3/C 14 (LUM)

WP 1

50' WOOD POLE
2-DOWN GUY, GUARD AND ANCHOR
1-TYPE 10A-WOOD POLE MOUNTED AT 90 DEG
1-ONE WAY EVP DETECTOR (PHASE 6) POLE MOUNTED
15' MAST ARM AND LUMINAIRE (LED)
WITH PEC.
1-VIDEO DETECTOR (V-1) POLE MOUNTED
2-R9-3 SIGNS AT 0 AND 270 DEG
METAL JUNCTION BOX WITH TERMINAL BLOCK

2-3" CONDUIT RISER AND WEATHERHEAD FROM HH 1
TO SPAN WIRES WITH:

1-6/C 14	1-6/C 14
4-4/C 14	4-4/C 14
2-3/C 14	1-3/C 14
2-3/C 14 (LUM)	2-3/C 14 (LUM)
2-2/C 20	1-3/C 20
2-3/C 14 VIDEO DETECTOR CABLES	1-3/C 14 VIDEO DETECTOR CABLES
1-1/C 6 INS. GR.	1-1/C 6 INS. GR.

3" CONDUIT ABOVE JUNCTION BOX TO SPAN
WIRES WITH:
1-6/C 14
1-3/C 20

1-1" CONDUIT RISER AND WEATHERHEAD ABOVE
SPAN WIRE WITH:
1-3/C 14 (LUM)
1-3/C 14 (CAM)
1-VIDEO DETECTION CAMERA (V-1)
1-VIDEO DETECTOR (V-1) CABLE WHIP

WP 3

50' WOOD POLE
2-DOWN GUY, GUARD AND ANCHOR
2-TYPE 10A-WOOD POLE MOUNTED AT 90 AND 180 DEG
1-ONE WAY EVP DETECTOR (PHASE 2+5) POLE MOUNTED
15' MAST ARM AND LUMINAIRE (LED)
WITH PEC.
1-VIDEO DETECTOR (V-3) POLE MOUNTED
2-R9-3 SIGNS AT 0 AND 270 DEG
METAL JUNCTION BOX WITH TERMINAL BLOCK

1-3" CONDUIT ABOVE JUNCTION BOX TO SPAN
WIRES WITH:
2-4/C 14
1-3/C 20

1-1" CONDUIT RISER AND WEATHERHEAD ABOVE
SPAN WIRE WITH:
1-3/C 14 (LUM)
1-3/C 14 (CAM)
1-VIDEO DETECTION CAMERA (V-3)
1-VIDEO DETECTOR (V-3) CABLE WHIP

WP 2

50' WOOD POLE
2-DOWN GUY, GUARD AND ANCHOR
2-TYPE 10A-WOOD POLE MOUNTED AT 90 DEG AND 180 DEG
15' MAST ARM AND LUMINAIRE (LED)
WITH PEC.
1-VIDEO DETECTOR (V-2) POLE MOUNTED
2-R9-3 SIGNS AT 0 DEG AND 270 DEG
METAL JUNCTION BOX WITH TERMINAL BLOCK

1-3" CONDUIT ABOVE JUNCTION BOX TO SPAN
WIRES WITH:
2-4/C 14

1-1" CONDUIT RISER AND WEATHERHEAD ABOVE
SPAN WIRE WITH:
1-3/C 14 (LUM)
1-3/C 14 (CAM)
1-VIDEO DETECTION CAMERA (V-2)
1-VIDEO DETECTOR (V-2) CABLE WHIP

A

F+I: TEMPORARY SIGNAL CABINET BASE
INSTALL: TEMP SIGNAL CABINET AND CONTROLLER
(STATE FURNISHED)

CONTROLLER CABINET TO HH1:
3" CONDUIT
1-6/C 14
4-4/C 14
2-3/C 14
2-3/C 20
2-3/C 14 VIDEO DETECTION CABLES
1-1/C 6 INS. GR.

3" CONDUIT
1-6/C 14
4-4/C 14
1-3/C 14
1-3/C 20
1-3/C 14 VIDEO DETECTION CABLES
1-1/C 6 INS. GR.

CONTROLLER CABINET TO SERVICE CABINET:
2" RSC
3-1/C 6
1-1/C 6 INS. GR.

B

10' POLE WITH POLE MOUNTED SERVICE CABINET:
3-1/C 2
2" CONDUIT TO HH1:
4-3/C 14 (LUM)

C

INP. GROUND MOUNTED TRANSFORMER
2" RSC TO POLE MOUNTED SERVICE CABINET
3-1/C 6
1-1/C 6 INS. GR.

T.H. 12 AND C.R. 34
TEMPORARY SIGNAL SYSTEM - POLE NOTES

S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005
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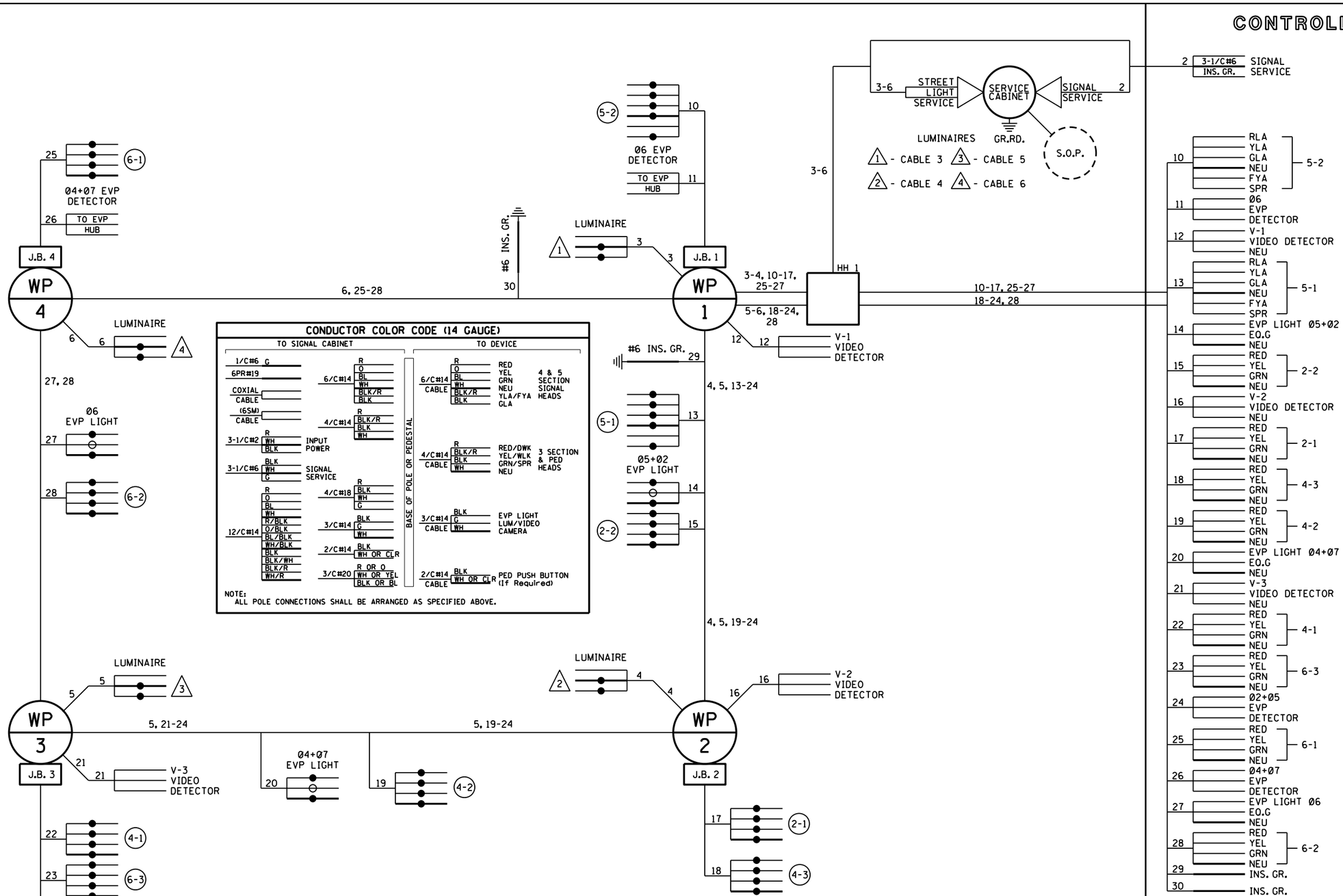
JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED	MSL
DRAWN	MSL
CHECKED	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
TEMPORARY SIGNAL PLAN

SHEET 226 OF 239

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T.H. 12 AND C.R. 34
TEMPORARY SIGNAL SYSTEM - WIRE DIAGRAM

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2/8/2019

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S.A.P. 135-010-009
S.A.P. 135-117-005
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JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED MSL
DRAWN MSL
CHECKED JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
TEMPORARY SIGNAL PLAN

SHEET 227 OF 239

STAGING AND TRAFFIC CONTROL PLAN

NOTES & GUIDELINES

GENERAL INFORMATION

1. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN THE TRAFFIC CONTROL IN THIS STAGING AND TRAFFIC CONTROL PLAN. IN PLACE SIGNING SHALL ALSO BE MAINTAINED OR TEMPORARILY RELOCATED DUE TO CONSTRUCTION ACTIVITIES.
2. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
3. ALL DISTANCES ARE APPROXIMATE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MN MUTCD.
5. ALL TRAFFIC CONTROL DEVICES SHALL BE PLACED IN ACCORDANCE WITH THE MN MUTCD.
6. THE REMOVAL OF TEMPORARY TRAFFIC CONTROL SHALL BE INCIDENTAL.
7. THE ITEM "TRAFFIC CONTROL" COVERS ALL DEVICES SHOWN ON THE PLAN SHEETS, TYPICAL LAYOUTS, MNMUTCD, THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL" AND OTHER SETUPS REQUIRED BY THE CONTRACTOR'S OPERATIONS.
8. AS EACH ROADWAY IS COMPLETED, THE CONTRACTOR SHALL PLACE THE FINAL SIGNING AND PAVEMENT MARKINGS REQUIRED TO SAFELY OPEN THAT ROAD TO TRAFFIC. THIS WORK SHALL BE COMPLETED ON OR BEFORE THE DATE OF OPENING AS APPROVED BY THE ENGINEER.
9. THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES TO THE INTERSECTING STREETS, PRIVATE DRIVES, AND DRIVEWAYS AND ACCESS TO ALL BUSINESSES DURING CONSTRUCTION. CONSTRUCTION MAY REQUIRE ADDITIONAL TEMPORARY TRAFFIC CONTROL NOT INDICATED IN THESE PLANS. THESE ADDITIONAL DEVICES ARE INCIDENTAL.
10. WRITTEN NOTICE SHALL BE PROVIDED TO THE CITY OF LITCHFIELD, MEEKER COUNTY, AND MNDOT 48 HOURS (NOT INCLUDING HOLIDAYS OR WEEKENDS) PRIOR TO BEGINNING CONSTRUCTION AND PRIOR TO EACH STAGE.

SIGNING

1. ALL TRAFFIC CONTROL DEVICES ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
2. WHEN SIGNS ARE PLACED, THEY SHALL BE MOUNTED ON POSTS DRIVEN INTO THE GROUND AT THE PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE ATTACHED "TYPICAL TEMPORARY SIGN FRAMING AND INSTALLATION DETAILS". IF THIS IS NOT POSSIBLE, THEY WILL BE MOUNTED ON PORTABLE SUPPORTS AS APPROVED BY THE ENGINEER. WHEN THE SIGNS ARE REMOVED THE SIGN POSTS SHALL ALSO BE REMOVED WITHIN 2 WEEKS.
3. SIGN PLACEMENT SHALL NOT OBSTRUCT EXISTING SIGNS.
4. ALL ORANGE WARNING AND ORANGE GUIDE SIGNS SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MNDOT APPROVED PRODUCT LIST FOR "SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS".
5. BARRICADES SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MNDOT APPROVED PRODUCT LIST FOR "BARRICADE SHEETING". NOTE THAT ASTM TYPE VII SHEETING IS NOT ALLOWED ON BARRICADES.
6. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" FIELD MANUAL.
7. THE CONTRACTOR SHALL COVER, CHANGE OR REMOVE INPLACE SIGNS THAT CONFLICT WITH THE TRAFFIC PATTERNS AS DIRECTED BY THE ENGINEER. ALL SIGNS ALTERED BY THE CONTRACTOR SHALL BE RETURNED TO THEIR ORIGINAL STATUS WHEN NORMAL PATTERNS ARE RESTORED. ALL SIGNS COVERED WITH OTHER SIGN PANELS OR BLANKS SHALL HAVE NYLON WASHERS SPACED BETWEEN THE SIGN AND THE PANEL.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE STAGE TO ANOTHER.
9. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED OR PROVIDE TEMPORARY SIGNING AT THEIR EXPENSE UNTIL THE FINAL SIGNING IS PLACED.
10. THE FINAL LOCATION OF ALL SIGNS SHOWN IN THIS PLAN SHALL BE AS SHOWN OR A MINIMUM OF 300 FEET FROM ANY EXISTING SIGN. IF THE 300 FOOT MINIMUM CANNOT BE MAINTAINED, THE SIGN LOCATIONS SHALL BE ADJUSTED TO PROVIDE THE LARGEST SPACING AVAILABLE.
11. THE CONTRACTOR SHALL PROVIDE "ROAD WORK AHEAD" SIGNS ON ALL ROADS THAT INTERSECT THE PROJECT. SIGN PLACEMENT SHALL CONFORM TO THE MN MUTCD.

PAVEMENT MARKING

1. THE CONTRACTOR SHALL OBLITERATE ANY CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. OBLITERATION OF CONFLICTING PAVEMENT MARKINGS SHALL BE INCIDENTAL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PLACEMENT OF FINAL STRIPING.

CONSTRUCTION INFORMATION SIGNING

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS FOLLOWS:

   PLACE G20-X2 WORK ZONE ADVANCE NOTICE SIGNS WITH THE CORRECT STARTING DATE DISPLAYED AT LEAST 7 DAYS IN ADVANCE OF BEGINNING CONSTRUCTION. ONCE WORK BEGINS, THE START DATE LEGEND SHALL BE COVERED BY A PLAQUE DISPLAYING THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON.

   CONSTRUCTION INFORMATION SIGNING NOT VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS WILL BE MOVED BY THE CONTRACTOR TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS DIRECTED BY THE PROJECT ENGINEER.

   THE CONTRACTOR SHALL PROVIDE THREE SIGNS, ONE (96 X 84) ON WESTBOUND TH 12 EAST OF CR 34, ONE (96 X 84) ON EASTBOUND TH 12 NORTH OF TH 24, AND ONE (96 X 84) ON NORTHBOUND TH 22 SOUTH OF PACIFIC ST. FINAL LOCATIONS WILL BE DETERMINED BY THE ENGINEER.

ALTERNATE PEDESTRIAN ROUTE

1. WHEN CROSSWALKS, SIDEWALKS OR OTHER PEDESTRIAN FACILITIES ARE BLOCKED, CLOSED OR RELOCATED, TEMPORARY FACILITIES SHALL INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
2. REFER TO THE MNDOT TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) WEBSITE FOR STANDARDS, GUIDANCE AND OPTIONS WHEN BLOCKING, CLOSING, OR RELOCATING PEDESTRIAN FACILITIES.
3. TWO ADJACENT INTERSECTIONS ALONG TH 12 SHALL NOT BE CLOSED TO TRAFFIC (INCLUDING PEDESTRIANS) AT THE SAME TIME. THIS IS REQUIRED TO FACILITATE VEHICLE AND PEDESTRIAN MOVEMENTS THROUGHOUT THE CONSTRUCTION AREA AND TO LIMIT THE LENGTH OF DETOUR ROUTES.
   ACCESS TO ALL RESIDENCES AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES UNLESS ACTIVE CONSTRUCTION ACTIVITIES ARE BEING PERFORMED WITHIN CLOSE PROXIMITY OF THE ACCESS AND IT IS PREVIOUSLY APPROVED BY THE ENGINEER.
4. REFER TO THE MNDOT TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL FOR DETAILS OF TYPICAL ADA PEDESTRIAN DEVICES.
5. REFER TO LAYOUTS IN THE MNDOT TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL (JANUARY 2018) FOR ADDITIONAL DETAILS ON CROSSWALK CLOSURES, PEDESTRIAN DETOURS, AND SIDEWALK BY-PASSES.
6. FOR ADDITIONAL STANDARDS, GUIDANCE, AND OPTIONS FOR DESIGNING TEMPORARY PEDESTRIAN ACCESS ROUTES, REFER TO THE MNDOT TPAR WEBSITE.
7. CONTRACTOR SHALL SUBMIT TEMPORARY TRAFFIC CONTROL/DETOUR PLANS TO THE ENGINEER 21 DAYS PRIOR TO IMPLEMENTATION FOR REVIEW/APPROVAL.

PROJECT STAGING NOTES

1. THE CONTRACTOR SHALL FOLLOW THE MOST RECENT VERSION OF THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL" FOR ANY SHORT TERM LANE AND/OR SHOULDER CLOSURES NECESSARY TO COMPLETE THE WORK IN ADDITION TO THE DETOURS AND DETAILS PROVIDED IN THE PLAN. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A LIST OF THE LAYOUTS BEING USED FROM THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL". THE CONTRACTOR SHALL SUBMIT THE LIST OF LAYOUTS 72 HOURS PRIOR TO COMMENCING THE WORK. THE ENGINEER MAY REQUIRE MODIFICATIONS AND/OR ADDITIONS TO THE LAYOUTS. MODIFICATIONS AND/OR ADDITIONS TO THE DEVICES SHOWN IN A LAYOUT ARE INCLUDED AS PART OF THE TRAFFIC CONTROL LUMP SUM.

STAGE 1

1. STAGE 1 SHALL BE COMPLETED IN YEAR 1 OF CONSTRUCTION (2019).
2. THE CONTRACTOR SHALL ENSURE THAT A PASSABLE SURFACE IS MAINTAINED ACROSS 4TH STREET FOR ONE OF EVERY 2 CONSECUTIVE INTERSECTIONS DURING CONSTRUCTION.
3. STAGE 1 DOES NOT HAVE A DETOUR ROUTE.

STAGE 2

1. STAGE 2 SHALL BE COMPLETED IN YEAR 2 OF CONSTRUCTION (2020).
2. STAGE 2 DETOUR ROUTE SHALL BE UTILIZED IN YEAR 2 OF CONSTRUCTION (2020).
3. REMOVABLE PREFORMED TAPE SHALL BE USED TO MASK 45° PARKING AND INSTALL PARALLEL PARKING ON 2ND STREET (SEE TAB FOR QUANTITY). QUANTITY AND DIMENSION OF PARALLEL PARKING STALLS ON SOUTH SIDE OF 2ND STREET SHALL MIRROR THE STALLS ON THE NORTH SIDE OF 2ND STREET.

INDEX

TRAFFIC CONTROL

SHEET NO.	DESCRIPTION
228	TITLE SHEET
229-230	TABULATIONS
231	SPECIAL SIGN DETAILS
232-235	DETAILS
236	STAGE 1
237-239	STAGE 2

TRAFFIC CONTROL SYMBOLS

- (F) - TYPE A FLASHING WARNING LIGHTS
- ⊢ - TRAFFIC CONTROL SIGN (SHOWN FACING LEFT)
- ⌴ - TYPE III BARRICADE
- ▨ - CONSTRUCTION DURING CURRENT PHASE
- ↰ - PAVEMENT MESSAGE (LEFT ARROW) (PREF TAPE)

LEGEND

1ST DIGIT WIDTH	2ND DIGIT PATTERN	3RD DIGIT COLOR
4" OR 8"	S - SOLID B - BROKEN D - DOUBLE/DOTTED	W - WHITE Y - YELLOW B - BLACK

EXAMPLE: (4SW) = 4" SOLID LINE WHITE - EPOXY

STRIPING KEY

⬠ REMOVABLE PREFORMED PAVEMENT MARKING TAPE

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S.A.P. 135-010-009
S.A.P. 135-117-005

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REV.	BY	DATE

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JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED	MSL
DRAWN	MSL
CHECKED	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
STAGING & TRAFFIC CONTROL PLAN

SHEET 228 OF 239

TRAFFIC CONTROL TABULATION SHEET

TEMPORARY TRAFFIC CONTROL						T
T.H. 12	2563	2581				
	PORTABLE CHANGEABLE MESSAGE SIGN	REMOVABLE PREFORMED PAVEMENT MARKING TAPE			REMOVABLE PREFORMED PLASTIC MASK (BLACK)	REMOVABLE PREFORMED PAVEMENT MESSAGE TAPE
		WHITE	YELLOW	TOTAL		WHITE
	UNIT DAY	LIN FT			LIN FT	SQ FT
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) (80% FEDERAL / 20% STATE FUNDS)						
DETOUR	51	1280	800	2080	630	31
STAGE 1						
STAGE 2		600		600	930	
S.P. 4704-89, S.A.P. 135-010-008 (T.H. 12/22) TOTALS	**51**			**2680**	**1560**	**31**

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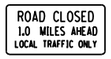
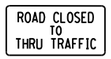
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TRAFFIC CONTROL TABULATION SHEET

"R" SERIES			
SIGN	SIGN NO.	COLOR	SIZE (INCHES)
	R3-8AC	BLACK ON WHITE	36 X 30
	R11-2	BLACK ON WHITE	48 X 30
	R11-3a	BLACK ON WHITE	60 X 30
	R11-4	BLACK ON WHITE	60 X 30

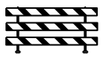
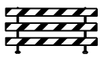
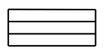
"W" SERIES			
SIGN	SIGN NO.	COLOR	SIZE (INCHES)
	W1-4R	BLACK ON ORANGE	48 X 48
	W3-X3	BLACK ON ORANGE	48 X 48
	W3-X5	BLACK ON ORANGE	48 X 48
	W20-2	BLACK ON ORANGE	48 X 48
	W20-3	BLACK ON ORANGE	48 X 48
	W20-100P	BLACK ON ORANGE	30 X 24

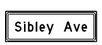
"M" SERIES			
SIGN	SIGN NO.	COLOR	SIZE (INCHES)
	M1-4	BLACK ON WHITE	24 X 24
	M1-5a	WHITE AND GOLD ON BLUE	24 X 24
	M3-1a	WHITE ON BLUE	24 X 12
	M3-2	WHITE ON BLUE	24 X 12

"M" SERIES CONTINUED			
SIGN	SIGN NO.	COLOR	SIZE (INCHES)
	M3-3a	WHITE ON BLUE	24 X 12
	M3-4	WHITE ON BLUE	24 X 12
	M4-8	BLACK ON ORANGE	24 X 12
	M4-8a	BLACK ON ORANGE	24 X 18
	M5-1L	BLACK ON WHITE	21 X 15
	M5-1La	WHITE ON BLUE	21 X 15
	M5-1R	BLACK ON WHITE	21 X 15
	M5-1Ra	WHITE ON BLUE	21 X 15
	M6-1	BLACK ON WHITE	21 X 15
	M6-1a	WHITE ON BLUE	21 X 15
	M6-3a	WHITE ON BLUE	21 X 15

"G" SERIES			
SIGN	SIGN NO.	COLOR	SIZE (INCHES)
	G20-X2	BLACK ON ORANGE	96 X 84
	G20-X2	BLACK ON ORANGE	96 X 84
	G20-X2	BLACK ON ORANGE	96 X 84
	G20-X2	BLACK ON ORANGE	96 X 14
	G20-X6L	BLACK ON ORANGE	36 X 24

"G" SERIES CONTINUED			
SIGN	SIGN NO.	COLOR	SIZE (INCHES)
	G20-X6R	BLACK ON ORANGE	36 X 24
	G20-X6T	BLACK ON ORANGE	36 X 24

TRAFFIC CONTROL DEVICES			
SIGN	SIGN NO.	COLOR	SIZE (INCHES)
	TYPE 'A'	AMBER	FLASHER
	T3L	ORANGE ON WHITE	72 X 6
	T3R	ORANGE ON WHITE	72 X 6
	PORTABLE CHANGEABLE MESSAGE SIGN		

MISCELLANEOUS			
SIGN	SIGN NO.	COLOR	SIZE (INCHES)
	SPECIAL 1	BLACK ON ORANGE	42 X 12
	SPECIAL 2	BLACK ON ORANGE	36 X 15
	SPECIAL 3	BLACK ON ORANGE	36 X 15
	SPECIAL 4	BLACK ON ORANGE	36 X 12
	COVER	WHITE	36 X 36

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S.A.P. 135-010-009
S.A.P. 135-117-005

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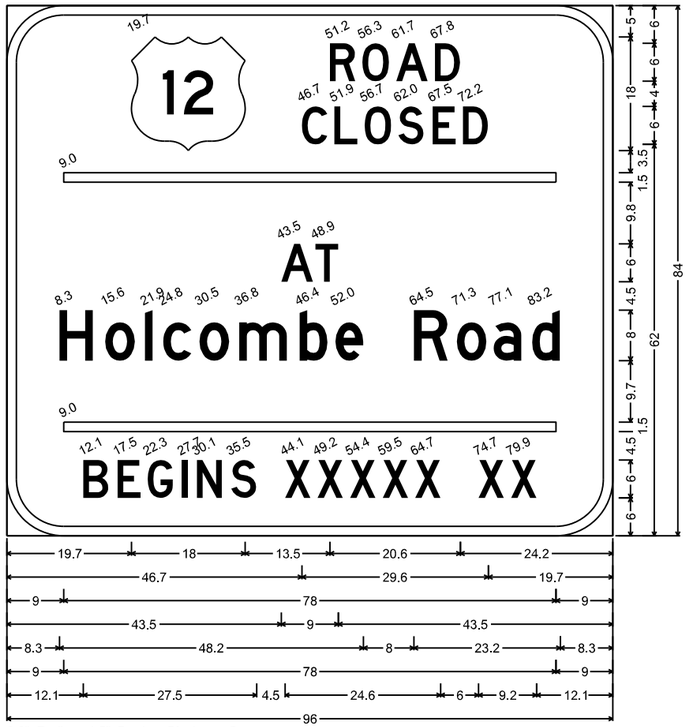
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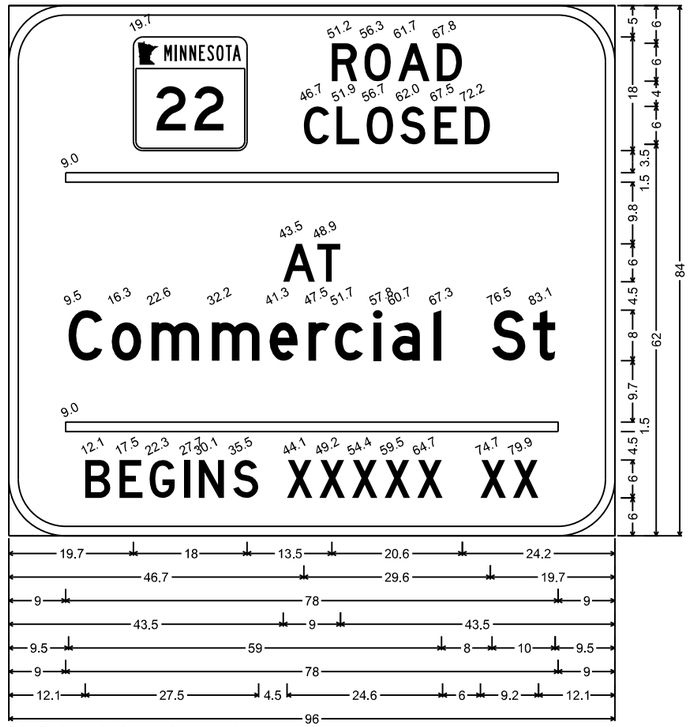
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STAGING & TRAFFIC CONTROL PLAN

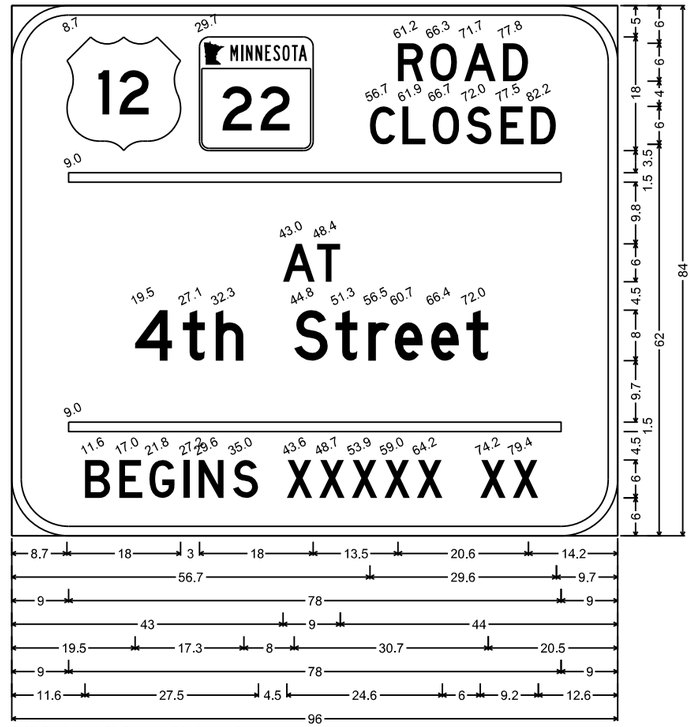
SHEET 230 OF 239



9.0" Radius, 1.5" Border, Black on Orange;
US 12 M1-4a; [ROAD] D; [CLOSED] D; [AT] D; [Holcombe Road] D; [BEGINS] D;
[XXXXX XX] D;



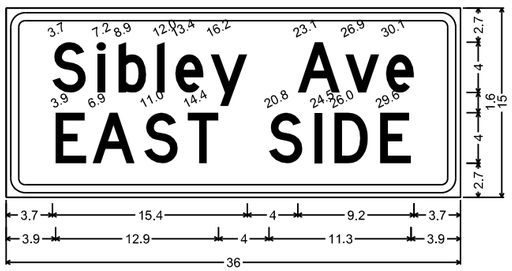
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[XXXXX XX] D;



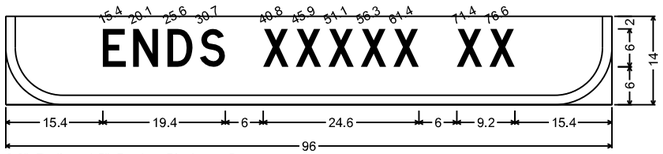
9.0" Radius, 1.5" Border, Black on Orange;
US 12 M1-4a; State Highway 22 M1-5b; [ROAD] D; [CLOSED] D; [AT] D; [4th Street] D;
[BEGINS] D; [XXXXX XX] D;



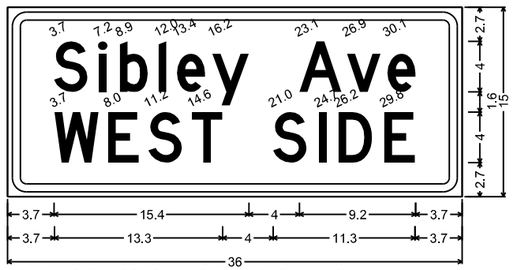
S-1; 1.5" Radius, 0.4" Border, 0.4" Indent, Black on Orange;
[4TH STREET] C;



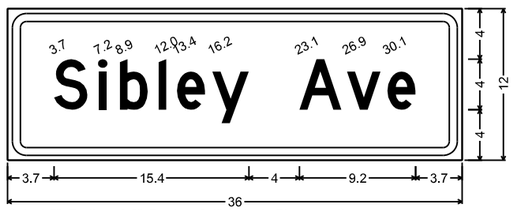
S-2; 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
[Sibley Ave] D; [EAST SIDE] D;



9.0" Radius, 1.5" Border, Black on Orange;
[ENDS] D; [XXXXX XX] D;



S-3; 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
[Sibley Ave] D; [WEST SIDE] D;



S-4: 1.5" Radius, 0.6" Border, 0.4" Indent, Black on Orange;
[Sibley Ave] D;

NOTES:
1. CORNERS OF SIGN PANELS EXTENDING BEYOND THE BORDER MAY BE TRIMMED.
2. SEE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR ARROW, FRACTION AND OVERLAY DETAILS.
3. ALL SIGN DIMENSIONS ARE SHOWN IN INCHES.

SPECIAL SIGN DETAILS

NOT TO SCALE
S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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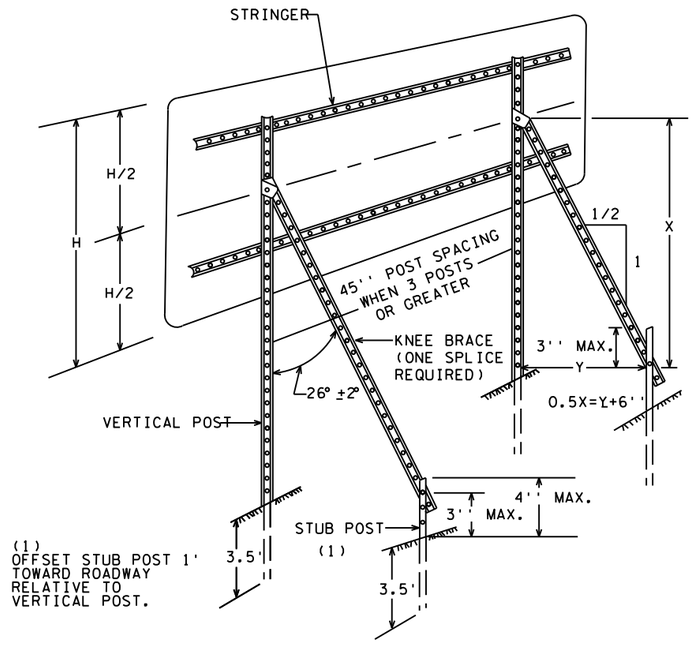
JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

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CHECKED	JJB

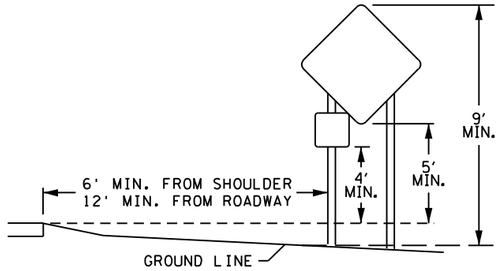
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T.H. 12/22 RECONSTRUCTION
STAGING & TRAFFIC CONTROL PLAN

SHEET 231 OF 239

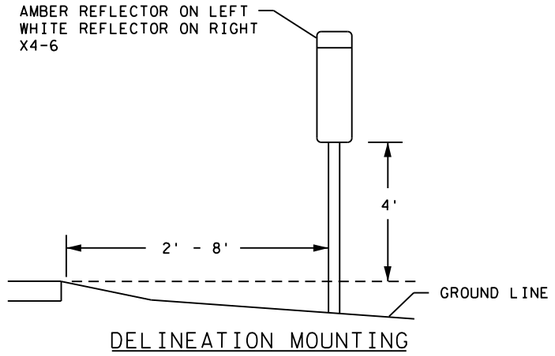
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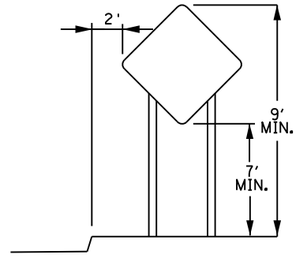
TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS



TYPICAL RURAL DESIGN



DELINEATION MOUNTING



TYPICAL URBAN DESIGN

SIGN DATA

SIGNS TO BE PLACED ON DRIVEN U-POSTS SHALL BE PLACED IN ACCORDANCE WITH TABLE 1 OR 2 BELOW. IF THE TTC PLAN PLACES POST MOUNTED TEMPORARY SIGNS ADJACENT TO EXISTING STRUCTURES THERE SHALL BE NO MORE THAN TWO U-POST WITHIN 84 INCHES OF EACH OTHER ALIGNED IN THE SAME PLANE SO AS NOT TO COMPROMISE THAT STRUCTURE'S AND THE NEW DEVICE'S CRASHWORTHINESS. IF IT IS NOT POSSIBLE TO MAINTAIN THIS SPACING THEN THE POST MOUNTED TEMPORARY SIGNS SHALL BE PLACED A MIN OF 4' BEYOND THE IN PLACE STRUCTURES. SIGN PANELS SHALL BE PLACED ON SIGN STRUCTURES TO MEET THE 5' MIN DEPICTED ON THE TYPICAL RURAL DESIGN DETAIL. THE 7' MIN DEPICTED ON THE TYPICAL URBAN DESIGN DETAIL, AND THE 9' MIN DEPICTED ON THE TYPICAL MOUNTING DETAIL ON THIS SHEET.

STANDARD CONSTRUCTION SIGNS IN MnDOT STANDARD SIGNS AND MARKINGS MANUAL

TABLE 1

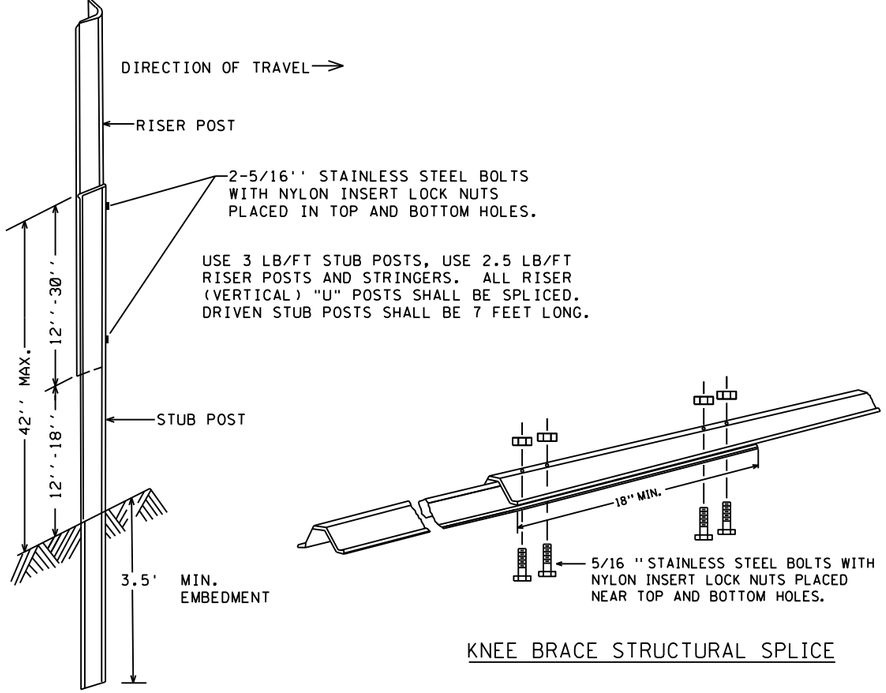
PANEL SIZE (IN.)	POSTS			
	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
24 x 24	2-U	18		13
30 x 24	2-U	18		13
36 x 30	2-U	24		13
36 x 36	2-U	18		14
42 x 36	2-U	30		14
48 x 48	2-U	30		15
60 x 60	2-U	42	1	16
66 X 60	2-U	42	2	16
72 x 72	2-U	42	2	17
96 x 54	2-U	54	2	19
96 X 84	2-U	54	2	19
132 X 108	3-U	45	3	22
168 x 132	4-U	48	4	25

GENERAL NOTES:
1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR PUNCHING HOLES.
3. MINIMUM OF 45" SPACING BETWEEN POSTS MUST BE MAINTAINED WHEN USING MORE THAN TWO POSTS.

TABLE 2

SPECIAL DESIGN CONSTRUCTION SIGNS

PANEL SIZE		POSTS			
LENGTH (IN.)	HEIGHT (IN.)	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
36	39	2-U	30		14



"U" POST BREAKAWAY SPLICE

KNEE BRACE STRUCTURAL SPLICE

NOTES: FOR TEMPORARY CONSTRUCTION SIGN FRAMING, THE CONTRACTOR MAY USE GRADE 5 ZINC PLATED BOLTS FOR ALL BOLTED CONNECTIONS, EXCEPT FOR THE KNEE BRACE CONNECTION TO THE REAR STUB POST, WHICH SHALL UTILIZE A 5/16 INCH STAINLESS STEEL BOLT AND NYLON INSERT LOCK NUT. ADDITIONAL SIGN FRAMING DETAILS CAN BE FOUND IN THE TRAFFIC ENGINEERING MANUAL PART 6.

IF THE CONTRACTOR ELECTS TO USE SOME OTHER TYPE OF SIGN SUPPORT (OTHER THAN U-CHANNEL SIGN POSTS) FOR MOUNTING CONSTRUCTION SIGNS, DETAILS OF THE PROPOSED SIGN STRUCTURE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE SIGN STRUCTURE COMPONENTS. ANY SIGN STRUCTURE TO BE SUBMITTED TO THE ENGINEER SHALL BE AN FHWA ACCEPTED BREAKAWAY SIGN SUPPORT. SIGN STRUCTURE SHALL ALSO BE APPROVED FOR 90 MPH WIND LOAD.

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

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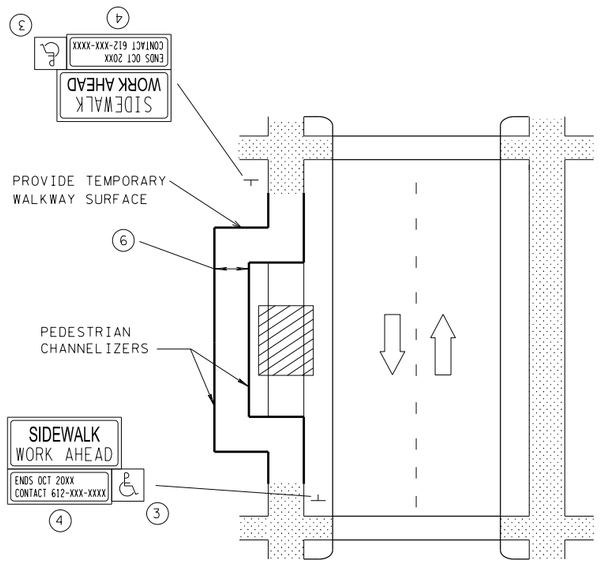
JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED	MSL
DRAWN	MSL
CHECKED	JJB

DETAILS

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
STAGING & TRAFFIC CONTROL PLAN

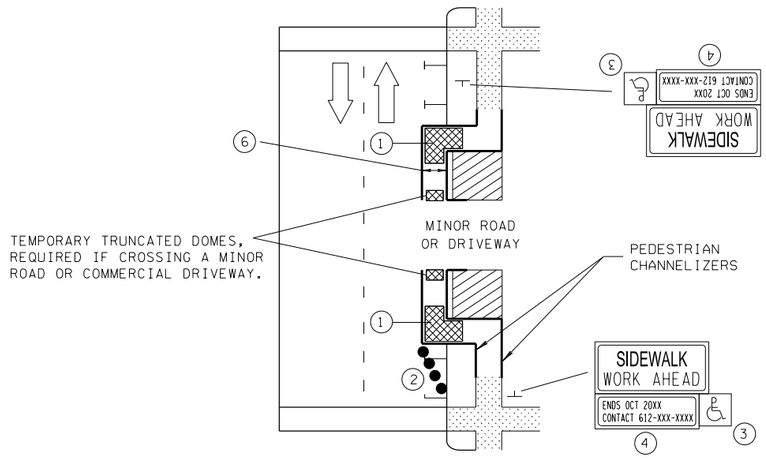
SHEET 232 OF 239



BYPASS ON ADJACENT AVAILABLE
RIGHT OF WAY

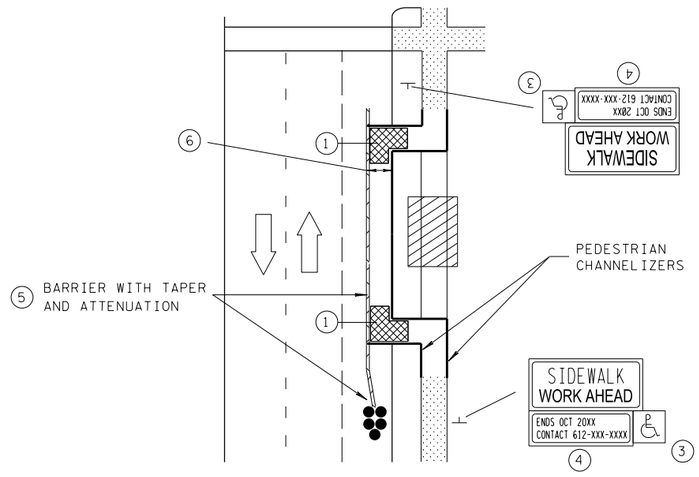
BYPASS TYPE A

NOTE: MAY ONLY BE USED ON ROADWAY WITH POSTED SPEED OF 45 MPH OR LESS.



SIDEWALK BYPASS USING PARKING OR
SHOULDER ON LOW SPEED ROADWAY

BYPASS TYPE B



SIDEWALK BYPASS USING
SHOULDER OR PARKING LANE
HIGH SPEED ROADWAY

BYPASS TYPE C

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES. THE ALTERNATE PEDESTRIAN ROUTE (APR) MUST REMAIN OPEN AT ALL TIMES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (APR) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. PROVIDE A FIRM, STABLE, FREE-DRAINING, AND NON-SLIP TEMPORARY WALKWAY SURFACE, REGARDLESS OF WEATHER CONDITIONS. THE TEMPORARY WALKWAY SURFACE SHALL BE SUPPORTED BY A SOLID BASE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND.THE TEMPORARY WALKWAY SURFACE WILL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, AND OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4 INCHES OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR THE TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.

THE PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO TRAFFIC (BIKES, PEDESTRIANS) IS REDUCED ENOUGH TO CAUSE HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.

ANY PORTABLE SIGN OR BARRICADE PLACED IN A PEDESTRIAN WALKWAY THAT COULD BE A HAZARD TO A VISUALLY IMPAIRED PEDESTRIAN SHOULD HAVE A DETECTABLE EDGE TO GUIDE THE PEDESTRIAN AROUND THE HAZARD.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

SPECIFIC NOTES

(1) TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.

(2) 5 DEVICE TAPER 25 FEET LONG, RECOMMENDED WHEN THE CLOSED AREA WAS USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.

(3) THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE FULLY ACCESSIBLE.

(4) TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHOULD INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.

(5) SEE MN MUTCD FOR GUIDANCE ON PLACEMENT AND USAGE OF BARRIER.

(6) IF A 60 INCH PEDESTRIAN WALKWAY WIDTH ISN'T PROVIDED FOR THE ROUTE, THEN A 60 INCH BY 60 INCH PASSING SPACE IS REQUIRED EVERY 200 FEET. THE MINIMUM WIDTH OF THE WALKWAY IS 48 INCHES.

LEGEND

- SIGN
- DIRECTION OF TRAFFIC
- EXISTING PEDESTRIAN SURFACE
- TRAFFIC CONTROL DEVICE
- WORK AREA
- SIDEWALK BARRICADE
- PEDESTRIAN CHANNELIZATION DEVICE
- BARRIER

TRAFFIC CONTROL
ALTERNATE PEDESTRIAN ROUTE (APR) BYPASS
DETAILS

PUBLISHED BY OTST: 3/30/2018

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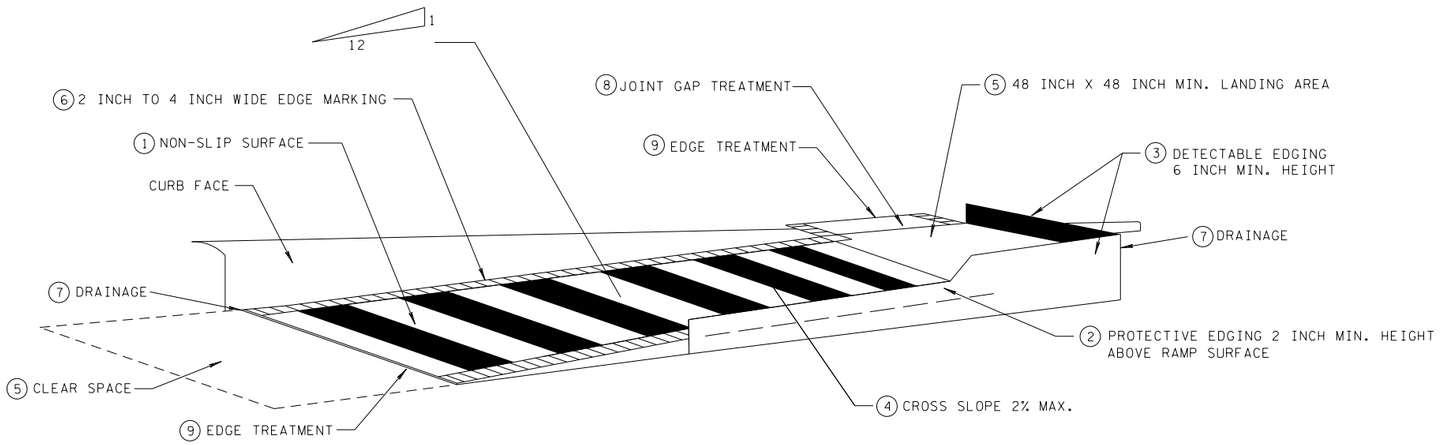
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DRAWN	MSL
CHECKED	JJB

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T.H. 12/22 RECONSTRUCTION
STAGING & TRAFFIC CONTROL PLAN

SHEET 233 OF 239

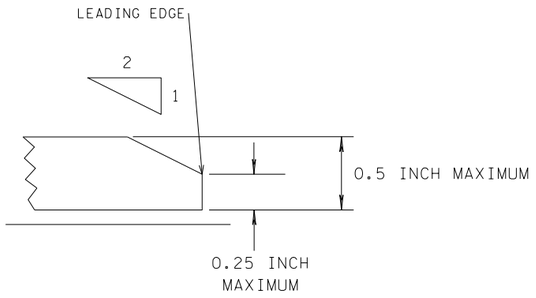
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TEMPORARY CURB RAMP
PARALLEL TO CURB

SPECIFIC NOTES

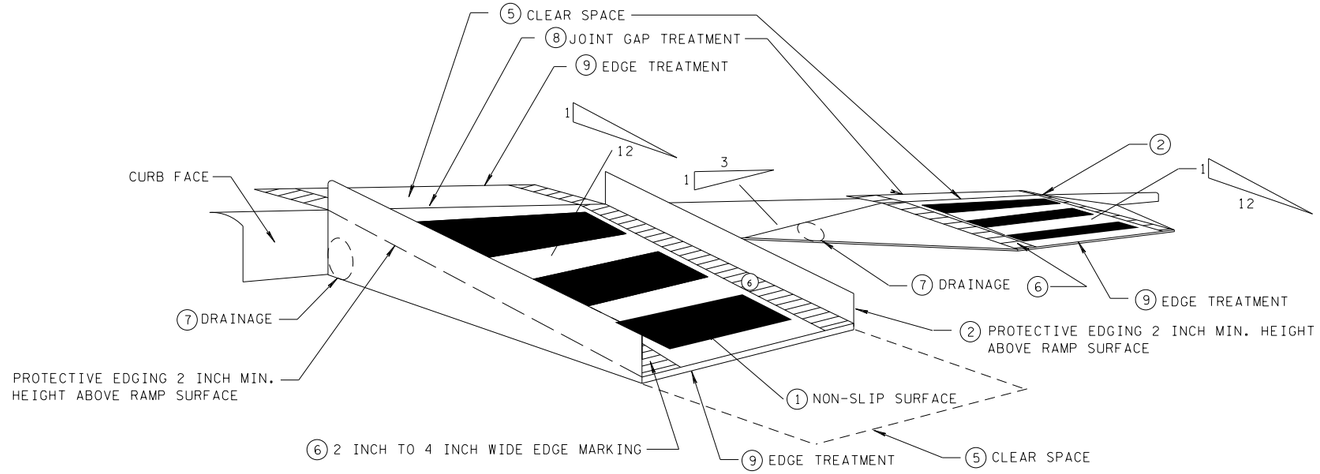
1. CURB RAMPS SHALL BE 48 INCHES MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.
2. PROTECTIVE EDGING WITH A 2 INCH MIN. HEIGHT SHALL BE PLACED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 INCHES OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3. PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 INCHES OR MORE.
3. DETECTABLE EDGING WITH 6 INCH MIN. HEIGHT AND CONTRASTING COLOR SHALL BE PLACED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. CURB RAMPS AND LANDINGS SHALL HAVE A 2% MAX. CROSS SLOPE.
5. CLEAR SPACE OF 48 INCH X 48 INCH MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
6. THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR, 2 INCH TO 4 INCH WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL NOT BE IMPEDED.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2 INCH WIDE.
9. CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2 INCH. LATERAL EDGES SHOULD BE VERTICAL UP TO 1/4 INCH HIGH, AND BEVELED AT 1:2 BETWEEN 1/4 INCH AND 1/2 INCH HEIGHT.



9 EDGE TREATMENT

SHOWN WITH PROTECTIVE EDGE

SHOWN WITH SIDE APRON



TEMPORARY CURB RAMP
PERPENDICULAR TO CURB

TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) RAMPS

DETAILS

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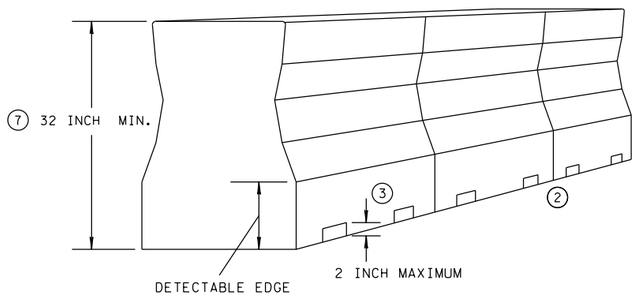
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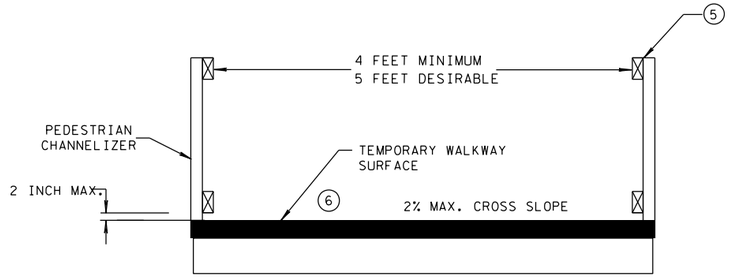
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T.H. 12/22 RECONSTRUCTION
STAGING & TRAFFIC CONTROL PLAN

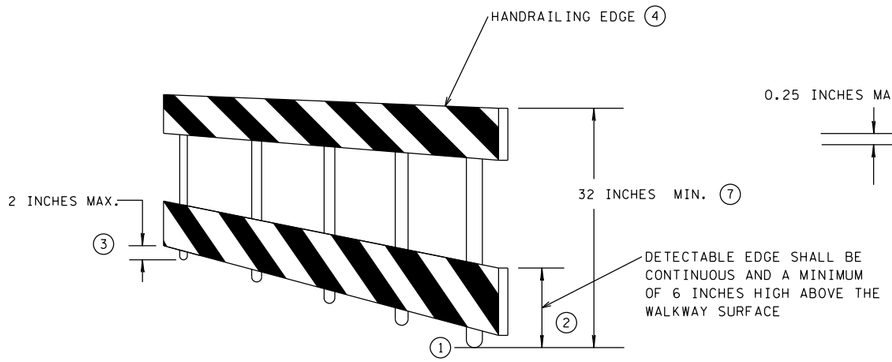
SHEET 234 OF 239



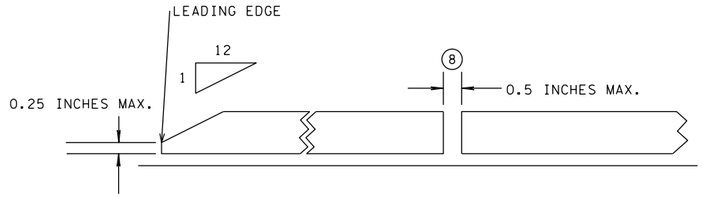
PEDESTRIAN CHANNELIZER USING A BARRIER



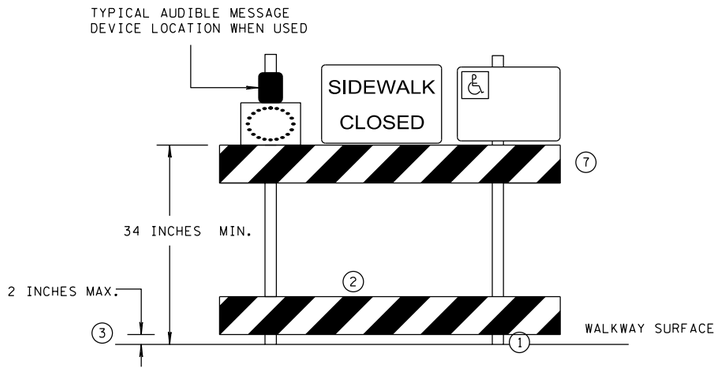
TEMPORARY WALKWAY SURFACE WITH PEDESTRIAN CHANNELIZERS



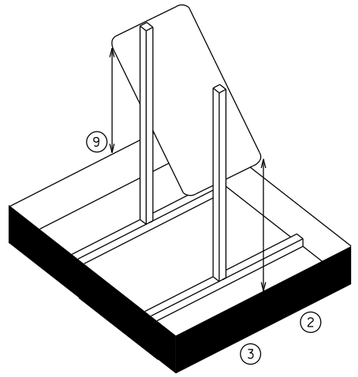
PEDESTRIAN CHANNELIZER



TEMPORARY WALKWAY SURFACE



SIDEWALK BARRICADE



NOTE: DETECTABLE EDGE FRAMED IMMEDIATELY BELOW OVERHANG

DETECTABLE EDGE FOR SIGN ON PORTABLE STAND

GENERAL NOTES

RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4 INCHES INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27 INCHES ABOVE THE WALKWAY SURFACE.

ANY PEDESTRIAN DEVICES USED TO PROVIDE POSITIVE PROTECTION FOR PEDESTRIANS OR WORKERS SHALL MEET CRASHWORTHY REQUIREMENTS APPROPRIATE FOR THE BARRIER APPLICATION.

SIDEWALK BARRICADES SHALL BE PLACED ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE.

ALL DEVICES USED TO CHANNELIZE PEDESTRIAN FLOW SHOULD INTERLOCK SUCH THAT GAPS DO NOT ALLOW PEDESTRIANS TO STRAY FROM THE CHANNELIZED PATH.

SPECIFIC NOTES

(1) ANY TRIPPING HAZARD IN THE WALKWAY NEEDS A DETECTABLE EDGE. BALLAST SHALL BE LOCATED BEHIND OR INTERNAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHALL NOT EXTEND INTO THE 48 INCH MINIMUM WALKWAY CLEAR SPACE AND SHALL NOT EXCEED 0.5 INCHES IN HEIGHT ABOVE THE WALKWAY SURFACE.

(2) DETECTABLE EDGES SHALL BE CONTINUOUS AND 6 INCHES MIN. HIGH ABOVE WALKWAY SURFACE AND HAVE COLOR MARKINGS CONTRASTING WITH THE WALKWAY SURFACE. THE DETECTABLE EDGE AROUND A PORTABLE SIGN STAND SHOULD BE PLACED IN THE WALKWAY AREA IN WHICH THE SIGN POSES A HAZARD TO A VISUALLY IMPAIRED PEDESTRIAN.

(3) DEVICES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2 INCHES IS ALLOWED FOR DRAINAGE PURPOSES.

(4) WHEN HAND GUIDANCE IS REQUIRED, THE TOP RAIL OR TOP SURFACE SHALL:
- BE IN A VERTICAL PLANE PERPENDICULAR TO THE WALKWAY ABOVE THE DETECTABLE EDGE,
- BE CONTINUOUS AT A HEIGHT OF 34 TO 38 INCHES ABOVE THE WALKWAY SURFACE, AND
- BE SUPPORTED WITH MINIMAL INTERFERENCE TO THE PEDESTRIAN'S HANDS OR FINGERS.

(5) ALL DEVICES SHALL BE FREE OF SHARP OR ROUGH EDGES, AND FASTENERS (BOLTS) SHALL BE ROUNDED TO PREVENT HARM TO HANDS, ARMS OR CLOTHING OF PEDESTRIANS.

(6) TEMPORARY WALKWAY SURFACES SHALL PROVIDE A FIRM, STABLE, FREE-DRAINING AND NON-SLIP REGARDLESS OF WEATHER CONDITIONS. TEMPORARY WALKWAY SURFACES SHALL ALLOW NORMAL USAGE OF WHEELCHAIRS, WALKERS, STROLLERS, OR OTHER MOBILITY DEVICES. CONCRETE, BITUMINOUS, STEEL, RUBBER, WOOD (3/4 INCHES OR THICKER), AND PLASTIC ARE ACCEPTABLE SURFACE MATERIALS FOR A TEMPORARY WALKWAY SURFACE. GRAVEL, MILLINGS, OR OTHER UNEVEN SURFACES ARE NOT ACCEPTABLE SURFACE MATERIALS.

(7) LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32 INCHES HIGH OR GREATER.

(8) SURFACE VERTICAL DISCONTINUITIES SHOULD NOT EXCEED 0.25 INCHES, IF IT DOES SEE "EDGE-TREATMENT DETAIL" ON THE TPAR RAMP SHEET.

(9) AN EDGE OF THE FRAMING MAY BE REMOVED IF IT IS NOT NEEDED FOR PED GUIDANCE. STABILITY OF THE DETECTABLE EDGE SHOULD BE MAINTAINED.

TEMPORARY PEDESTRIAN ACCESS ROUTE (TPAR) WALKWAY DEVICES DETAILS

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T.H. 12/22 RECONSTRUCTION
STAGING & TRAFFIC CONTROL PLAN

SHEET 235 OF 239

5TH ST. E.

4TH ST. E.

3RD ST. E.

2ND ST. E.

1ST ST. E.

WILLMAR AVE.

DONNELLY AVE.

AUSTIN AVE.

SWIFT AVE.

MILLER AVE.

RAMSEY AVE.

SIBLEY AVE.

MARSHALL AVE.

HOLCOMBE AVE.

ARMSTRONG AVE.

W. DEPOT ST.

B.N.S.F.

COMMERCIAL ST.

12

B1

B2

B3

ROAD CLOSED AHEAD

4TH STREET

100 FEET

ROAD CLOSED TO THRU TRAFFIC

ROAD CLOSED

LEGEND

UNDER CONSTRUCTION

STAGE 1

0 150 300

SCALE FEET

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SHEET 236 OF 239

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BEGINS XXXXX XX
4th Street
AT
ROAD CLOSED
12 22 MINNESOTA

Sibley Ave
BUSINESS ACCESS

T.H. 12/22 REGIONAL DETOUR ROUTE

SEE SHEET 239

SEE SHEET 238

T.H. 22 REGIONAL DETOUR ROUTE

Sibley Ave
BUSINESS ACCESS

ROAD CLOSED
12
AT
Holcombe Road
BEGINS XXXXX XX

MINNESOTA 22
ROAD CLOSED
AT
Commercial St
BEGINS XXXXX XX

GENERAL NOTES:

1. ALL TRAFFIC CONTROL SIGNING SHALL BE 300' FROM ANY OTHER SIGNS. IF 300' CANNOT BE MAINTAINED, PROVIDE THE LARGEST DISTANCE POSSIBLE.

NOTES:

(1) PLACE SIGN 7 DAYS PRIOR TO CLOSURE

LEGEND
- T.H. 22 REGIONAL DETOUR
- T.H. 12/22 REGIONAL DETOUR
- UNDER CONSTRUCTION

STAGE 2 DETOUR

0 750 1500
SCALE FEET

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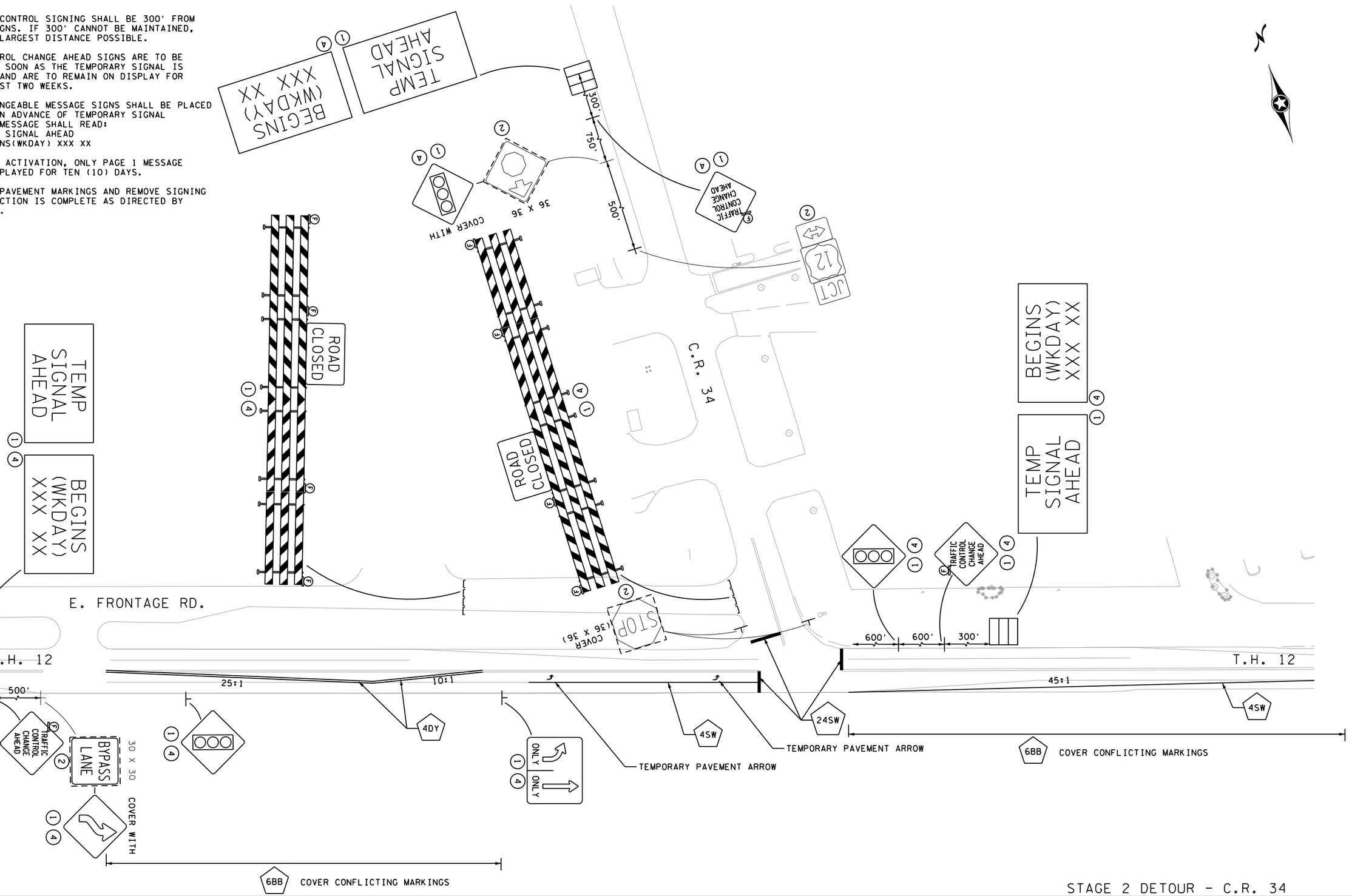
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SHEET 237 OF 239

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GENERAL NOTES:

1. ALL TRAFFIC CONTROL SIGNING SHALL BE 300' FROM ANY OTHER SIGNS. IF 300' CANNOT BE MAINTAINED, PROVIDE THE LARGEST DISTANCE POSSIBLE.
2. TRAFFIC CONTROL CHANGE AHEAD SIGNS ARE TO BE DISPLAYED AS SOON AS THE TEMPORARY SIGNAL IS OPERATIONAL AND ARE TO REMAIN ON DISPLAY FOR ONLY THE FIRST TWO WEEKS.
3. PORTABLE CHANGEABLE MESSAGE SIGNS SHALL BE PLACED SEVEN DAYS IN ADVANCE OF TEMPORARY SIGNAL ACTIVATION. MESSAGE SHALL READ:
   PAGE 1: TEMP SIGNAL AHEAD
   PAGE 2: BEGINS(WKDAY) XXX XX
4. AFTER SIGNAL ACTIVATION, ONLY PAGE 1 MESSAGE SHALL BE DISPLAYED FOR TEN (10) DAYS.
5. RESTORE ALL PAVEMENT MARKINGS AND REMOVE SIGNING WHEN CONSTRUCTION IS COMPLETE AS DIRECTED BY THE ENGINEER.



NOTES:
(1) F&I
(2) INPLACE
(4) REMOVE

STAGE 2 DETOUR - C.R. 34

0 50 100
SCALE FEET

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REV.	BY	DATE

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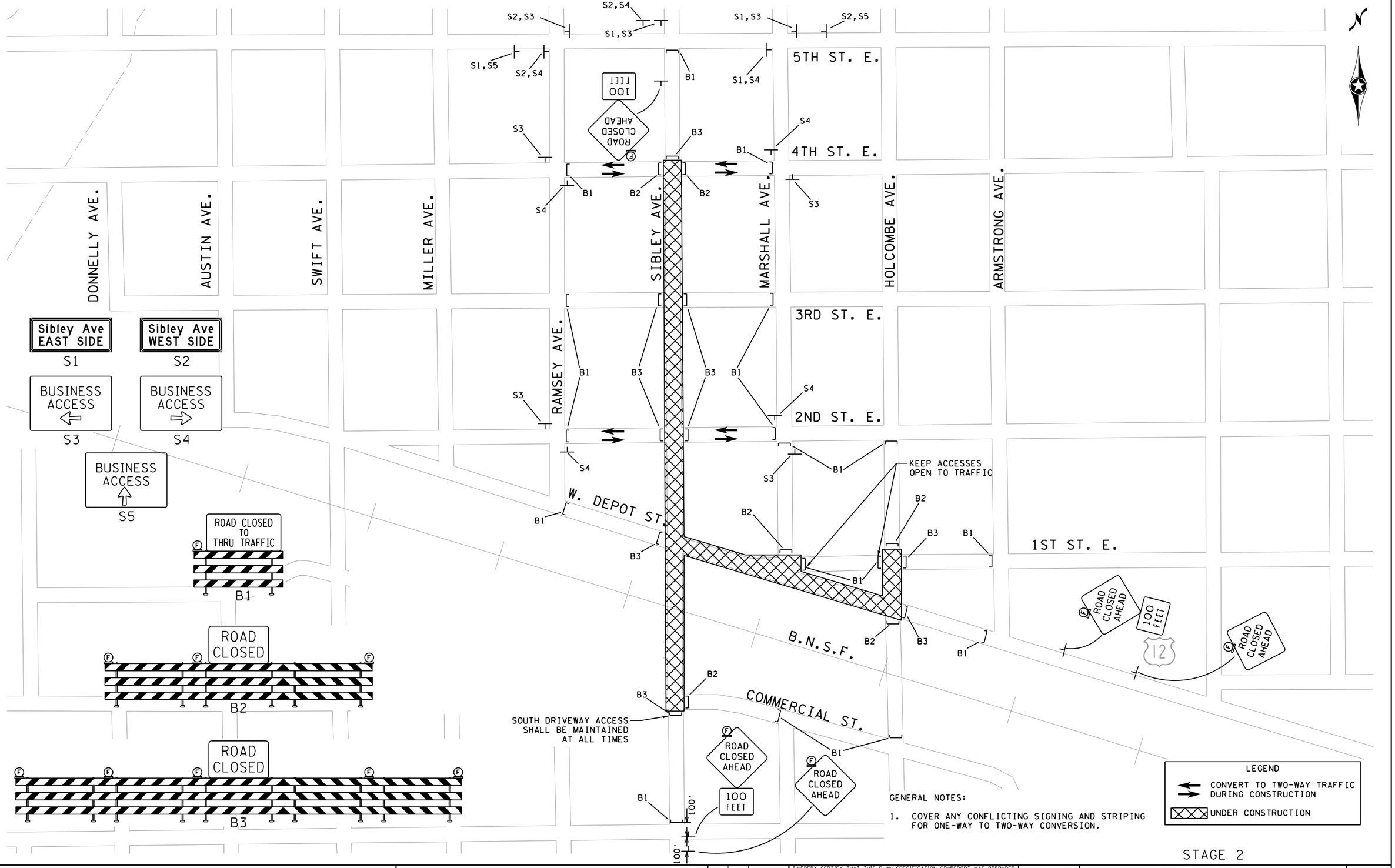
JACOB J. BONGARD
LIC. NO. 52210 DATE 12-27-2018

DESIGNED	MSL
DRAWN	MSL
CHECKED	JJB

S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
STAGING & TRAFFIC CONTROL PLAN

SHEET 238 OF 239

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2/8/2019

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S.A.P. 135-010-009
S.A.P. 135-117-005

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S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
STAGING & TRAFFIC CONTROL PLAN

SHEET 239 OF 239

EXISTING TOPOGRAPHIC SYMBOLS

- ACCESS GRATE
- AIR CONDITION UNIT
- ANTENNA
- AUTO SPRINKLER CONNECTION
- BARRICADE PERMANENT
- BASKETBALL POST
- BENCH
- BIRD FEEDER
- BOLLARD
- BUSH
- CATCH BASIN RECTANGULAR CASTING
- CATCH BASIN CIRCULAR CASTING
- CURB STOP
- CLEAN OUT
- CULVERT END
- DRINKING FOUNTAIN
- DOWN SPOUT
- FILL PIPE
- FIRE HYDRANT
- FLAG POLE
- FLARED END / APRON
- FUEL PUMP
- GRILL
- GUY WIRE ANCHOR
- HANDHOLE
- HANDICAP SPACE
- IRRIGATION SPRINKLER HEAD
- IRRIGATION VALVE BOX
- LIFT STATION CONTROL PANEL
- LIFT STATION
- LIGHT POLE
- MAILBOX
- MANHOLE-COMMUNICATION
- MANHOLE-ELECTRIC
- MANHOLE-GAS
- MANHOLE-HEAT
- MANHOLE-SANITARY SEWER
- MANHOLE-STORM SEWER
- MANHOLE-UTILITY
- MANHOLE-WATER
- METER
- ORDER MICROPHONE
- PARKING METER
- PAVEMENT MARKING
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC
- PEDESTRIAN PUSH BUTTON
- PICNIC TABLE
- POLE-UTILITY
- POST
- RAILROAD SIGNAL POLE
- REGULATION STATION GAS
- SATELLITE DISH
- SIGN TRAFFIC
- SIGNAL CONTROL CABINET
- SOIL BORING
- SIREN
- TELEPHONE BOOTH
- TILE INLET
- TILE OUTLET
- TILE RISER
- TRANSFORMER-ELECTRIC
- TREE-CONIFEROUS
- TREE-DEAD
- TREE-DECIDUOUS
- TREE STUMP
- TRAFFIC ARM BARRIER
- TRAFFIC SIGNAL
- TRASH CAN
- UTILITY MARKER
- VALVE
- VALVE POST INDICATOR
- VALVE VAULT
- VENT PIPE
- WATER SPIGOT
- WELL
- WETLAND DELINEATED MARKER
- WETLAND
- WET WELL
- YARD HYDRANT

PROPOSED TOPOGRAPHIC SYMBOLS

- CLEANOUT
- MANHOLE
- LIFT STATION
- STORM SEWER CIRCULAR CASTING
- STORM SEWER RECTANGULAR CASTING
- STORM SEWER FLARED END / APRON
- STORM SEWER OUTLET STRUCTURE
- STORM SEWER OVERFLOW STRUCTURE
- CURB BOX
- FIRE HYDRANT
- WATER VALVE
- WATER REDUCER
- WATER BEND
- WATER TEE
- WATER CROSS
- WATER SLEEVE
- WATER CAP / PLUG
- RIP RAP
- DRAINAGE FLOW
- TRAFFIC SIGNS

SURVEY SYMBOLS

- BENCH MARK LOCATION
- CONTROL POINT
- MONUMENT IRON FOUND
- CAST IRON MONUMENT

EXISTING TOPOGRAPHIC LINES

- RETAINING WALL
- FENCE
- FENCE-DECORATIVE
- GUARD RAIL
- TREE LINE
- BUSH LINE

SURVEY LINES

- CONTROLLED ACCESS
- BOUNDARY
- CENTERLINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- SETBACK LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- TEMPORARY EASEMENT

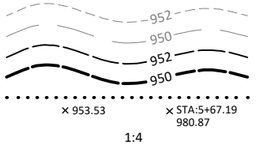
EXISTING UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE

PROPOSED UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE
- PIPE CASING

GRADING INFORMATION



- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- PROPOSED GRADING LIMITS / SLOPE LIMITS
- PROPOSED SPOT ELEVATION
- RISE:RUN (SLOPE)

HATCH PATTERNS

- BITUMINOUS
- CONCRETE
- GRAVEL

EXISTING PRIVATE UTILITY LINES

NOTE:
EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA"

- F F F F — UNDERGROUND FIBER OPTIC
- E E E E — UNDERGROUND ELECTRIC
- G G G G — UNDERGROUND GAS
- C C C C — UNDERGROUND COMMUNICATION
- OE OE OE — OVERHEAD ELECTRIC
- OC OC OC — OVERHEAD COMMUNICATION
- OU OU OU — OVERHEAD UTILITY

UTILITIES IDENTIFIED WITH A QUALITY LEVEL OTHER THAN D:

LINE TYPES FOLLOW THE FORMAT: UTILITY TYPE - QUALITY LEVEL
EXAMPLE: G-A G-A — UNDERGROUND GAS, QUALITY LEVEL A
UTILITY QUALITY LEVEL (A,B,C,D) DEFINITIONS CAN BE FOUND IN CI/ASCE 38-02.

UTILITY QUALITY LEVELS:

LEVEL D - INFORMATION COMES SOLELY FROM EXISTING UTILITY RECORDS.

LEVEL C - SURVEYING ABOVE GROUND UTILITY FACILITIES, SUCH AS MANHOLES, VALVE BOXES, ETC; AND CORRELATING THIS INFORMATION WITH EXISTING UTILITY RECORDS.

LEVEL B - THE USE OF SURFACE GEOPHYSICAL TECHNIQUES TO DETERMINE THE EXISTENCE AND HORIZONTAL POSITION OF UNDERGROUND UTILITIES.

LEVEL A - THE USE OF NONDESTRUCTIVE DIGGING EQUIPMENT AT HORIZONTAL AND VERTICAL POSITION OF UNDERGROUND UTILITIES, AS WELL AS THE TYPE, SIZE, CONDITION, MATERIAL, AND OTHER CHARACTERISTICS.

ABBREVIATIONS

A	ALGEBRAIC DIFFERENCE	GRAV	GRAVEL	RT	RIGHT
ADJ	ADJUST	GU	GUTTER	SAN	SANITARY SEWER
ALT	ALTERNATE	GV	GATE VALVE	SCH	SCHEDULE
B-B	BACK TO BACK	HDPE	HIGH DENSITY POLYETHYLENE	SERV	SERVICE
BIT	BITUMINOUS	HH	HANDHOLE	SHLD	SHOULDER
BLDG	BUILDING	HP	HIGH POINT	STA	STATION
BMP	BEST MANAGEMENT PRACTICE	HWL	HIGH WATER LEVEL	STD	STANDARD
BR	BEGIN RADIUS	HYD	HYDRANT	STM	STORM SEWER
BV	BUTTERFLY VALVE	I	INVERT	TC	TOP OF CURB
CB	CATCH BASIN	K	CURVE COEFFICIENT	TE	TEMPORARY EASEMENT
C&G	CURB AND GUTTER	L	LENGTH	TEMP	TEMPORARY
CIP	CAST IRON PIPE	LO	LOWEST OPENING	TNH	TOP NUT HYDRANT
CIPP	CURED-IN-PLACE PIPE	LP	LOW POINT	TP	TOP OF PIPE
CL	CENTER LINE	LT	LEFT	TYP	TYPICAL
CL.	CLASS	MH	MANHOLE	VCP	VITRIFIED CLAY PIPE
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM	VERT	VERTICAL
C.O.	CHANGE ORDER	MR	MID RADIUS	VPC	VERTICAL POINT OF CURVE
COMM	COMMUNICATION	NIC	NOT IN CONTRACT	VPI	VERTICAL POINT OF INTERSECTION
CON	CONCRETE	NMC	NON-METALLIC CONDUIT	VPT	VERTICAL POINT OF TANGENT
CSP	CORRUGATED STEEL PIPE	NTS	NOT TO SCALE	WM	WATERMAIN
CLVT	CULVERT	NWL	NORMAL WATER LEVEL		
DIA	DIAMETER	OHW	ORDINARY HIGH WATER LEVEL		
DIP	DUCTILE IRON PIPE	PC	POINT OF CURVE	AC	ACRES
DWY	DRIVEWAY	PCC	POINT OF COMPOUND CURVE	CF	CUBIC FEET
E	EXTERNAL CURVE DISTANCE	PE	PERMANENT EASEMENT	CV	COMPACTED VOLUME
ESMT	EASEMENT	PED	PEDESTRIAN, PEDESTAL	CY	CUBIC YARD
ELEC	ELECTRIC	PERF	PERFORATED PIPE	EA	EACH
ELEV	ELEVATION	PERM	PERMANENT	EV	EXCAVATED VOLUME
EOF	EMERGENCY OVERFLOW	PI	POINT OF INTERSECTION	LB	POUND
ER	END RADIUS	PL	PROPERTY LINE	LF	LINEAR FEET
EX	EXISTING	PRC	POINT OF REVERSE CURVE	LS	LUMP SUM
FES	FLARED END SECTION	PT	POINT OF TANGENT	LV	LOOSE VOLUME
F-F	FACE TO FACE	PVC	POLYVINYL CHLORIDE PIPE	SF	SQUARE FEET
FF	FINISHED FLOOR	PVMT	PAVEMENT	SV	STOCKPILE VOLUME
F&I	FURNISH AND INSTALL	R	RADIUS	SY	SQUARE YARD
FM	FORCEMAIN	RCP	REINFORCED CONCRETE PIPE		
FO	FIBER OPTIC	RET	RETAINING		
F.O.	FIELD ORDER	R/W	RIGHT-OF-WAY		
GRAN	GRANULAR	RSC	RIGID STEEL CONDUIT		

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HORZ. 0 25 50 SCALE FEET
VERT. 0 5 10 SCALE FEET

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CHUCK DEWOLF, P.E.
LIC. NO. 40931 DATE 12/21/2018

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www.bolton-menk.com

DESIGNED JAC, DTI
DRAWN SP, DTI
CHECKED CWD
CLIENT PROJ. NO. W14.115048

NO.	REVISION	DATE

S.P. 4704-89 (T.H.12)
T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - LEGEND

SHEET M1 OF M24

WEST 4TH ST

NORTH DONNELLY AVE

NORTH AUSTIN AVE

REMOVALS LEGEND:

REMOVE EXISTING WATERMAIN, VALVE, HYDRANT, WATER SERVICE, AND CURB STOP & BOXES

REMOVE SANITARY SEWER MAIN, SANITARY SEWER SERVICE, AND MANHOLE

WEST 4TH ST

NORTH SWIFT AVE

NORTH MILLER AVE

HORZ. SCALE 0 25 50 FEET

VERT. SCALE 0 5 10 FEET

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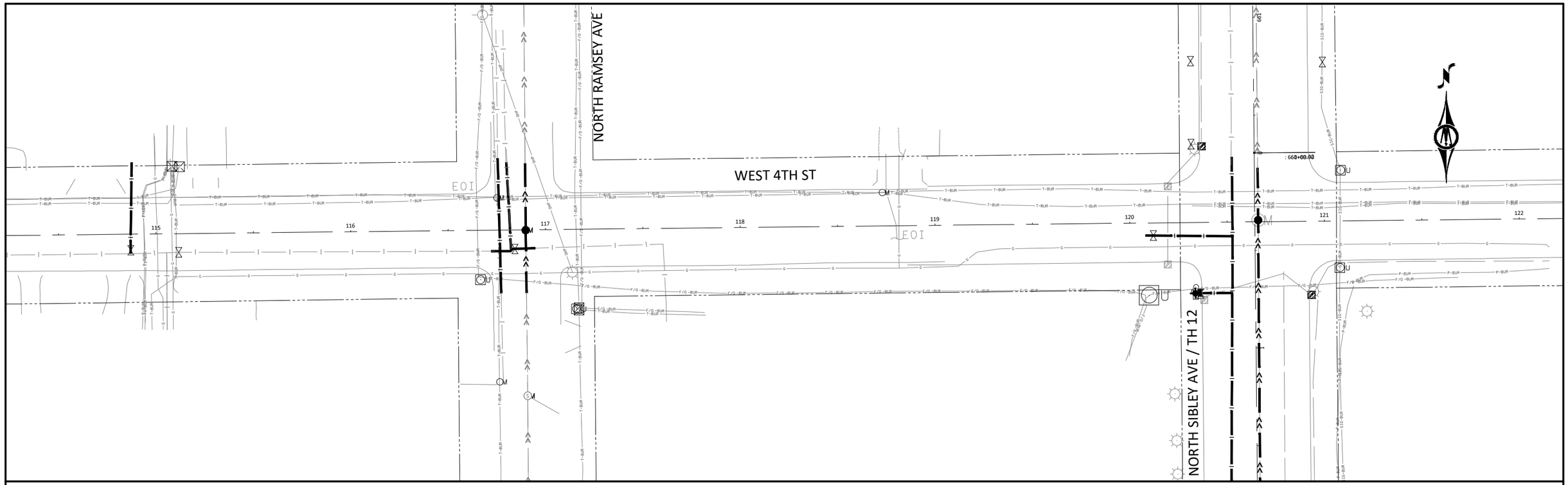
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CLIENT PROJ. NO.	W14.115048

NO.	REVISION	DATE

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T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - REMOVALS
4TH STREET

SHEET M2 OF M24

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HORZ. SCALE 0 25 50 FEET

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T.H. 12/22 RECONSTRUCTION

SANITARY & WATER PLANS - REMOVALS
4TH STREET

SHEET M3 OF M24

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WEST 4TH ST

NORTH SIBLEY AVE / TH 12

WEST 3RD ST

REMOVALS LEGEND:

REMOVE EXISTING WATERMAIN, VALVE, HYDRANT, WATER SERVICE, AND CURB STOP & BOXES

REMOVE SANITARY SEWER MAIN, SANITARY SEWER SERVICE, AND MANHOLE

WEST 2ND ST

NORTH SIBLEY AVE / TH 12

EAST DEPOT ST / TH 12

WEST DEPOT ST

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HORZ. 0 25 50
SCALE FEET

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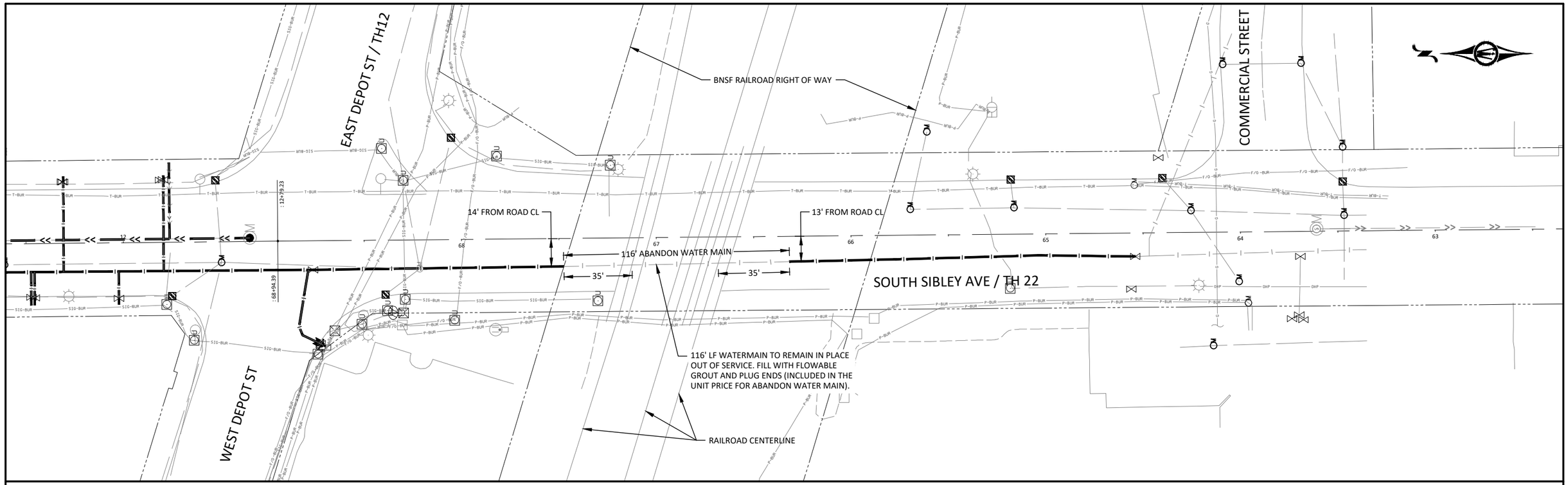
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CWD			
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W14.115048			

S.P. 4704-89 (T.H.12)
T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - REMOVALS
T.H. 12 - SIBLEY AVENUE

SHEET M4 OF M24



REMOVALS LEGEND:

REMOVE EXISTING WATERMAIN, VALVE, HYDRANT, WATER SERVICE, AND CURB STOP & BOXES

REMOVE SANITARY SEWER MAIN, SANITARY SEWER SERVICE, AND MANHOLE

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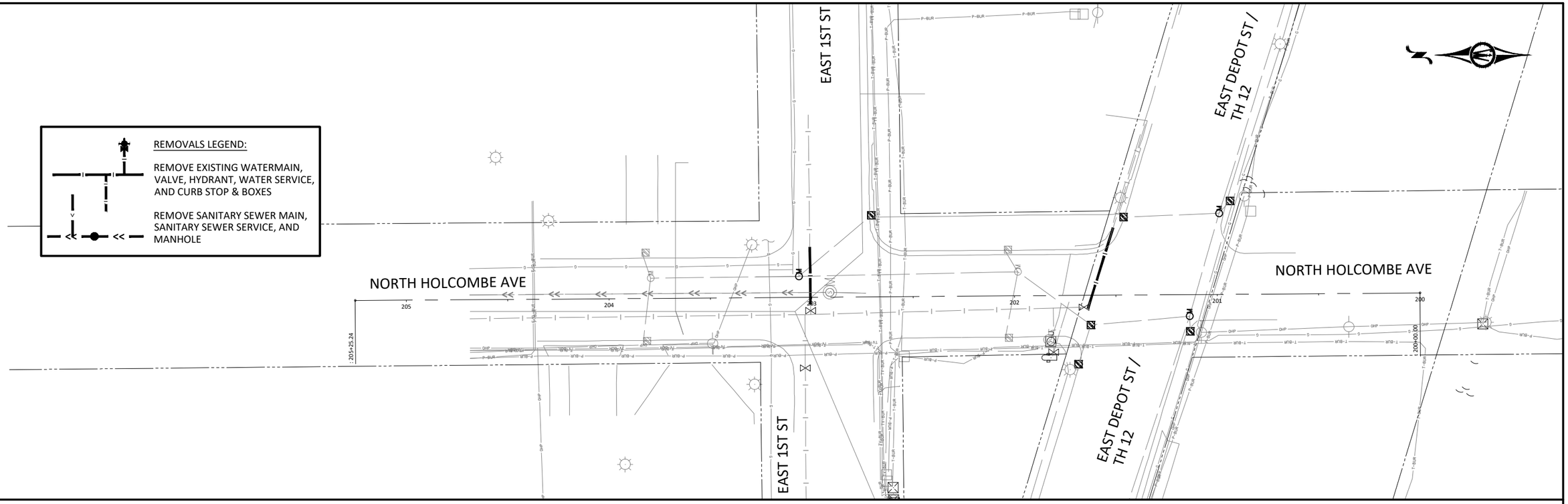
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T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - REMOVALS
T.H. 22 - SIBLEY AVENUE

SHEET M5 OF M24

REMOVALS LEGEND:

REMOVE EXISTING WATERMAIN, VALVE, HYDRANT, WATER SERVICE, AND CURB STOP & BOXES

REMOVE SANITARY SEWER MAIN, SANITARY SEWER SERVICE, AND MANHOLE



HORZ. SCALE 0 25 50 FEET

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T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - REMOVALS
HOLCOMBE AVENUE

SHEET M6 OF M24

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CONSTRUCT WATER SERVICES (CITY OF LITCHFIELD 100% CITY FUNDS)

M-1

STREET	HOUSE NUMBER/ DESCRIPTION	DIRECTION FROM MAIN	2504 1" CORPORATION STOP (EACH)	2504 1" CURB STOP & BOX (EACH)	2504 1" TYPE PE PIPE (WATER SERVICE PIPE) (2) (LIN FT)	2504 2" CORPORATION STOP (EACH)	2504 2" CURB STOP & BOX (EACH)	2504 2" TYPE PE PIPE (WATER SERVICE PIPE) (2) (LIN FT)	2504 CONNECT TO EXISTING WATER SERVICE (OPEN TRENCH) (EACH)	2504 RECONNECT WATER SERVICE (DIRECTIONAL DRILLED) (BY OTHERS) (EACH)	2506 CASTING ASSEMBLY SPECIAL (1) (EACH)	NOTES
4TH STREET	420 4TH ST W	NORTH	1	1	45				1			
4TH STREET	402 AUSTIN AVE N	NORTH	1	1	39				1			
4TH STREET	402 SWIFT AVE N	NORTH	1	1	39				1			
4TH STREET	401 MILLER AVE N	NORTH	1	1	39				1			
4TH STREET	104 4TH ST W	NORTH	1	1	39				1			
		SUBTOTAL 4TH STREET	5	5	201				5			
T.H. 12 / SIBLEY AVE.	325	WEST				1	1	17	1		1	
T.H. 12 / SIBLEY AVE.	311	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	309	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	305	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	301	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	242	EAST	1	1	44					1	1	
T.H. 12 / SIBLEY AVE.	241	WEST	1	1	17					1	1	
T.H. 12 / SIBLEY AVE.	240	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	237	WEST	1	1	17					1	1	
T.H. 12 / SIBLEY AVE.	236	EAST	1	1	44					1	1	
T.H. 12 / SIBLEY AVE.	234	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	231	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	230	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	229	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	227	WEST	1	1	17					1	1	
T.H. 12 / SIBLEY AVE.	226	EAST	1	1	44					1	1	
T.H. 12 / SIBLEY AVE.	225	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	223	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	222	EAST				1	1	44	1		1	
T.H. 12 / SIBLEY AVE.	219	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	217	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	215	WEST	1	1	17					1	1	
T.H. 12 / SIBLEY AVE.	214	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	213	WEST				1	1	17	1		1	
T.H. 12 / SIBLEY AVE.	210	EAST				1	1	44	1		1	
T.H. 12 / SIBLEY AVE.	208	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	207	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	202	EAST										SERVICE CONNECTS TO 2ND ST E
T.H. 12 / SIBLEY AVE.	201	WEST										SERVICE CONNECTS TO 2ND ST W
T.H. 12 / SIBLEY AVE.	135	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	134	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	130	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	129	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	127	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	126	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	120	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	119	WEST	1	1	17					1	1	
T.H. 12 / SIBLEY AVE.	116	EAST	1	1	44					1	1	
T.H. 12 / SIBLEY AVE.	115	WEST	1	1	17					1	1	
T.H. 12 / SIBLEY AVE.	113	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	112	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	110	EAST	1	1	44				1		1	
T.H. 12 / SIBLEY AVE.	109	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	105	WEST	1	1	17				1		1	
T.H. 12 / SIBLEY AVE.	100	EAST	1	1	44				1		1	
		SUBTOTAL T.H. 12 / SIBLEY AVE.	39	39	1095	4	4	122	33	10	43	
		PROJECT TOTALS	**44**	**44**	**1296**	**4**	**4**	**122**	**38**	**10**	**43**	

NOTES:
(1) USED TO COVER CURB STOP AND TRACER WIRES IN CONCRETE BOULEVARD
(2) SDR 9

WATERMAIN REMOVALS (CITY OF LITCHFIELD 100% CITY FUNDS)

M-2

LINE	STREET	FROM STATION	TO STATION	2104 REMOVE WATER MAIN (LIN FT)	2104 REMOVE HYDRANT (EACH)	2104 ABANDON WATER MAIN (LIN FT)
1	4TH STREET	101+98	120+52	631		
2	T.H. 12	0+00	12+81	1558	3	
3	T.H. 22	64+54	68+85	369	1	116
4	T.H. 12 EAST	20+42	20+84	42		
5	HOLCOMBE AVENUE	201+50	203+30	28		
			PROJECT TOTALS	**2628**	**4**	**116**

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CHUCK DEWOLF, P.E.
LIC. NO. 40931 DATE 12/21/2018

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DRAWN SP, DTI
CHECKED CWD
CLIENT PROJ. NO. W14.115048

NO.	REVISION	DATE

S.P. 4704-89 (T.H.12)
T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - TABLES

SHEET M7 OF M24

WATERMAIN FITTINGS (CITY OF LITCHFIELD 100% CITY FUNDS)

M-3

LINE	STREET	FROM STATION	TO STATION	16" SLEEVE (EACH)	12" SLEEVE (EACH)	10" SLEEVE (EACH)	8" SLEEVE (EACH)	6" SLEEVE (EACH)	4" SLEEVE (EACH)	16" 45 BEND (EACH)	12" 45 BEND (EACH)	10" 45 BEND (EACH)	8" 45 BEND (EACH)	4" 45 BEND (EACH)	12"X8" CROSS (EACH)	10"X10" CROSS (EACH)	8"X8" CROSS (EACH)	16"X12" TEE (EACH)	10"X6" TEE (EACH)	10"X4" TEE (EACH)	8"X8" TEE (EACH)	8"x6" TEE (EACH)	8"x4" TEE (EACH)	16"X10" REDUCER (EACH)	10"X6" REDUCER (EACH)	10"4" REDUCER (EACH)	8"x6" REDUCER (EACH)	8"x4" REDUCER (EACH)	8" CAP (EACH)
1	4TH STREET	100+00	102+30	1	1	1				1	2	3						1						1					
2	4TH STREET	102+30	106+10		2				2		4		4		1													2	
3	4TH STREET	106+10	109+56		2				2				4		1													2	
4	4TH STREET	109+56	113+12		2				2						1													2	
5	4TH STREET	113+12	116+95			2			2					2		1			1	1						1	1		
6	TH 12 / SIBLEY AVE	0+00	0+84					1													1	1							1
7	TH 12 / SIBLEY AVE	0+84	5+18				1		2								1					1	1					1	
8	TH 12 / SIBLEY AVE	5+18	9+59						1				2				1					1						1	
9	TH 12 / SIBLEY AVE	9+59	12+81																										
10	TH 22	63+20	68+85										4									1							
11	HOLCOMBE AVE	200+00	204+00				1		2				4	4															
			PROJECT TOTALS (FITTINGS)	**1**	**7**	**3**	**2**	**1**	**13**	**1**	**6**	**3**	**18**	**6**	**3**	**1**	**2**	**1**	**1**	**1**	**1**	**4**	**1**	**1**	**1**	**1**	**1**	**8**	**1**
			POUNDS PER EACH FITTING	170	76	62	46	33	20	202	86	70	46	22	157	145	105	280	90	78	86	72	60	124	47	46	36	32	22
			TOTAL POUNDS PER FITTING	**170**	**532**	**186**	**92**	**33**	**260**	**202**	**516**	**210**	**828**	**132**	**471**	**145**	**210**	**280**	**90**	**78**	**86**	**288**	**60**	**124**	**47**	**46**	**36**	**256**	**22**
			PROJECT TOTAL (POUNDS)	**5400**																									

WATERMAIN TABULATION (CITY OF LITCHFIELD 100% CITY FUNDS)

M-4

ROADWAY	LOCATION	STATION	2504 CONNECT TO EXISITNG WATERMAIN (EACH)	2504 4" GATE VALVE & BOX (2) (EACH)	2504 6" GATE VALVE & BOX (EACH)	2504 8" GATE VALVE & BOX (EACH)	2504 10" GATE VALVE & BOX (EACH)	2504 16" BUTTERFLY VALVE & BOX (EACH)	2504 HYDRANT (EACH)	2504 ADJUST GV & BOX (EACH)	2504 4" PVC WATER MAIN (2) (LIN FT)	2504 6" PVC WATER MAIN (LIN FT)	2504 8" PVC WATER MAIN (LIN FT)	2504 10" PVC WATER MAIN (LIN FT)	2504 12" PVC WATER MAIN (LIN FT)	2504 16" PVC WATER MAIN (LIN FT)	2504 16" STEEL CASING PIPE JACKED (1) (LIN FT)	2504 4" POLYSTYRENE INSULATION (SQ YD)
4TH STREET NE	DONNELLY AVE	100+00 - 102+30	3				1	1		1				47	31	23		18
4TH STREET NE	DONNELLY AVE - AUSTIN AVE	102+30 - 106+10	4			2				2			51		72			25
4TH STREET NE	AUSTIN AVE - SWIFT AVE	106+10 - 109+56	4			2				2			63		27			22
4TH STREET NE	SWIFT AVE - MILLER AVE	109+56 - 113+12	4			2				3			35		10			7
4TH STREET NE	MILLER AVE - RAMSEY AVE	113+12 - 116+95	6		2		2			4	9	50		78				7
		SUBTOTAL 4TH STREET	21		2	6	3	1		12	9	50	149	125	140	23		79
T.H. 12	4TH STREET	0+00 - 0+84	1		1	3			1			21	157					11
T.H. 12	3RD STREET	0+84 - 5+18	3	1	1	4			1		31	15	521					
T.H. 12	2ND STREET	5+18 - 9+59	2		1	4			1		4	17	535					32
T.H. 12	DEPOT STREET	9+59 - 12+81											346					29
		SUBTOTAL T.H. 12	6	1	3	11			3		35	53	1559					72
T.H. 22	DEPOT ST - COMMERCIAL ST	63+20- 68+85	1		1	2			1			42	420				167	
		SUBTOTAL T.H. 22	1		1	2			1			42	420				167	
HOLCOMBE AVE	T.H. 12 - EAST 1ST STREET	200+00 - 204+00	3	1						2	28		42					25
		SUBTOTAL HOLCOMBE AVE	3	1						2	28		42					25
		PROJECT TOTALS	**31**	**2**	**6**	**19**	**3**	**1**	**4**	**14**	**72**	**145**	**2170**	**125**	**140**	**23**	**167**	**176**

NOTES:

(1) MINIMUM DIAMETER

(2) FIRE SUPPRESSION SERVICE. COORDINATE WITH OWNER AND MEEKER COUNTY BUILDING PERSONNEL

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LIC. NO. 40931 DATE 12/21/2018

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NO.	REVISION	DATE

S.P. 4704-89 (T.H.12)

T.H. 12/22 RECONSTRUCTION

SANITARY & WATER PLANS - TABLES

SHEET M8 OF M24

CONSTRUCT SANITARY SEWER (CITY OF LITCHFEILD 100% CITY FUNDS)

M-5

ROADWAY	STRUCTURE	STATION	OFFSET	2503 CONNECT TO EXISTING SANITARY SEWER (1) (EACH)	2503 8" x 6" PVC WYE (EACH)	2503 10" x 6" PVC WYE (EACH)	2503 8" PVC PIPE SEWER (LIN FT)	2503 10" PVC PIPE SEWER (LIN FT)	2506 CONSTRUCT DRAINAGE STRUCTURE DESIGN 4007 (2) (LIN FT)	2506 ADJUST FRAME & RING CASTING (EACH)
4TH STREET NE	E	103+69	2.1' RT		1		208		4.6	1
4TH STREET NE	F	105+77	2.4' RT	2			42		8.2	1
4TH STREET NE	G	109+48	1.2' LT	2			62		6.8	1
4TH STREET NE	H	113+19	8.4' LT	2			56		7.9	1
4TH STREET NE	I	113+25	13.8' LT	2			54		8.9	1
4TH STREET NE	J	116+90	.2' RT	2			66		12.2	1
			SUBTOTAL 4TH STREET	10	1		488		48.6	6
T.H. 12	D	12+65	1.7' LT		15		348		10.6	
T.H. 12	C	9+17	1.5' LT	2	21		441		13.4	
T.H. 12	B	4+76	.8' LT	1		5		466	13.5	
T.H. 12	A	0+10	1.7' LT	1					12.3	
			SUBTOTAL T.H. 12	4	36	5	789	466	49.8	
			PROJECT TOTALS	**14**	**37**	**5**	**1277**	**466**	**98.4**	**6**

NOTES:
(1) TEMPORARY SANITARY SEWER BYPASS PUMPING SHALL BE INCIDENTAL
(2) ALL CASTINGS SHALL BE AS SPECIFIED

SANITARY SEWER REMOVALS (CITY OF LITCHFIELD 100% CITY FUNDS)

M-6

LINE	STREET	FROM STATION	TO STATION	2104 REMOVE MANHOLE OR CATCH BASIN (EACH)	2104 REMOVE SEWER PIPE (SANITARY) (LIN FT)
1	4TH STREET	103+74	116+90	6	484
2	T.H. 12	0+34	12+65	4	1373
			PROJECT TOTAL	**10**	**1857**

SANITARY SEWER SERVICES (CITY OF LITCHFIELD 100% CITY FUNDS)

M-7

STREET	HOUSE NUMBER/ DESCRIPTION	DIRECTION FROM MAIN	2503 6" PVC PIPE SEWER (3) (LIN FT)	2503 OPTION 1: CONNECT TO EXISTING SANITARY SEWER SERVICE (OPEN TRENCH) (EACH)	2503 OPTION 2: RECONNECT SANITARY SEWER SERVICE (CIPPLL LATERAL) (EACH)	NOTES
4TH STREET NE	420	NORTH	45			
		SUBTOTAL 4TH STREET	45			
T.H. 12 / SIBLEY AVE.	325	WEST	31	1		
T.H. 12 / SIBLEY AVE.	311	WEST	31	1		
T.H. 12 / SIBLEY AVE.	309	WEST	31		1	
T.H. 12 / SIBLEY AVE.	305	WEST	31	1		
T.H. 12 / SIBLEY AVE.	301	WEST	31	1		
T.H. 12 / SIBLEY AVE.	242	EAST	31		1	
T.H. 12 / SIBLEY AVE.	241	WEST				NO REPORTED SERVICE
T.H. 12 / SIBLEY AVE.	240	EAST	31	1		
T.H. 12 / SIBLEY AVE.	237	WEST	31	1		
T.H. 12 / SIBLEY AVE.	236	EAST	31		1	
T.H. 12 / SIBLEY AVE.	234	EAST	31	1		
T.H. 12 / SIBLEY AVE.	231	WEST	31	1		
T.H. 12 / SIBLEY AVE.	230	EAST	31	1		
T.H. 12 / SIBLEY AVE.	229	WEST	31	1		
T.H. 12 / SIBLEY AVE.	227	WEST	31		1	
T.H. 12 / SIBLEY AVE.	226	EAST	31		1	
T.H. 12 / SIBLEY AVE.	225	WEST	31	1		
T.H. 12 / SIBLEY AVE.	223	WEST	31	1		
T.H. 12 / SIBLEY AVE.	222	EAST	31	1		
T.H. 12 / SIBLEY AVE.	219	WEST	31	1		
T.H. 12 / SIBLEY AVE.	217	WEST	31	1		
T.H. 12 / SIBLEY AVE.	215	WEST	31		1	
T.H. 12 / SIBLEY AVE.	214	EAST	31	1		
T.H. 12 / SIBLEY AVE.	213	WEST	31	1		
T.H. 12 / SIBLEY AVE.	210	EAST	31	1		
T.H. 12 / SIBLEY AVE.	208	EAST	31	1		
T.H. 12 / SIBLEY AVE.	207	WEST	31	1		
T.H. 12 / SIBLEY AVE.	202	EAST				REPORTED SERVICE ON 2ND ST
T.H. 12 / SIBLEY AVE.	201	WEST				REPORTED SERVICE ON 2ND ST
T.H. 12 / SIBLEY AVE.	135	WEST	31	1		
T.H. 12 / SIBLEY AVE.	134	EAST	31	1		
T.H. 12 / SIBLEY AVE.	130	EAST	31	1		
T.H. 12 / SIBLEY AVE.	129	WEST	31	1		
T.H. 12 / SIBLEY AVE.	127	WEST	31	1		
T.H. 12 / SIBLEY AVE.	126	EAST	31	1		
T.H. 12 / SIBLEY AVE.	120	EAST	31	1		
T.H. 12 / SIBLEY AVE.	119	WEST	31		1	
T.H. 12 / SIBLEY AVE.	116	EAST				NO REPORTED SERVICE
T.H. 12 / SIBLEY AVE.	115	WEST	31		1	
T.H. 12 / SIBLEY AVE.	113	WEST	31	1		
T.H. 12 / SIBLEY AVE.	112	EAST	31	1		
T.H. 12 / SIBLEY AVE.	110	EAST	31	1		
T.H. 12 / SIBLEY AVE.	109	WEST	31	1		
T.H. 12 / SIBLEY AVE.	105	WEST	31	1		
T.H. 12 / SIBLEY AVE.	100	EAST	31		1	
		SUBTOTAL T.H. 12 / SIBLEY AVE.	1271	32	9	
T.H. 12 EAST/ W. DEPOT ST	120	SOUTH	70			APPROXIMATE ADDRESS. SANITARY STUB. CONNECT TO EXISTING MANHOLES (SAN).
		SUBTOTAL T.H. 12 EAST/ W. DEPOT ST	70			
		PROJECT TOTALS	**1386**	**32**	**9**	

NOTES:
(3) SDR 26

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LIC. NO. 40931 DATE 12/21/2018

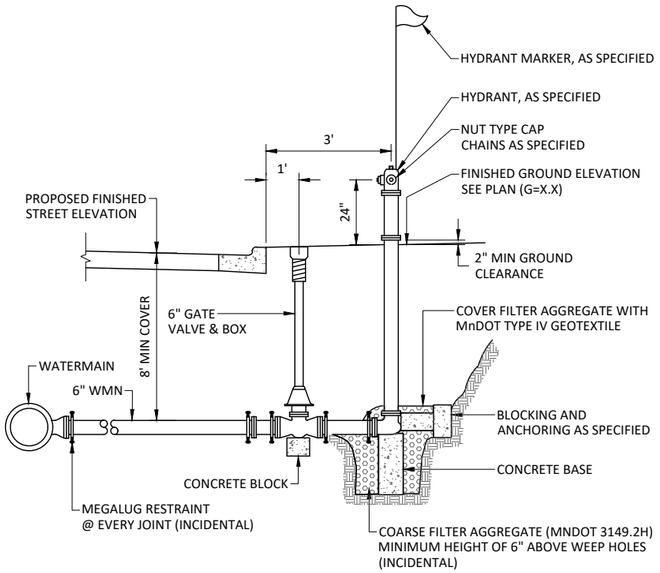
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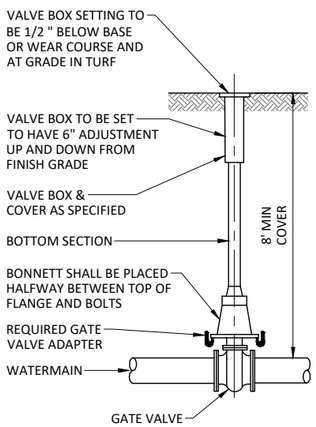
SHEET M9 OF M24



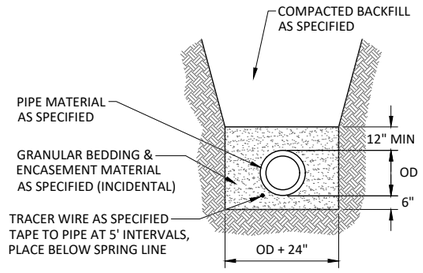
HYDRANTS LOCATED WHERE THE GROUNDWATER TABLE IS ABOVE THE DRAIN OUTLET SHALL HAVE THE OUTLET DRAIN PLUGGED AND SHALL BE EQUIPPED WITH A TAG STATING "PUMP AFTER USE"

HYDRANT INSTALLATION, MEGALUGS
NOT TO SCALE

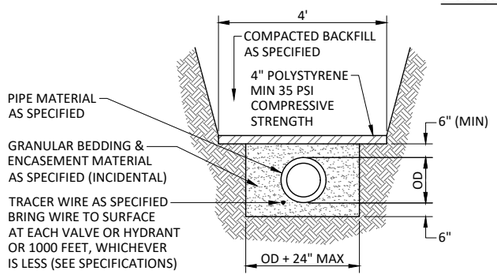
NOTES:
1. VALVE BOX SHALL BE CENTERED ON OPERATING NUTS, STRAIGHT, FREE FROM DEBRIS, AND ALL SECTIONS UNBROKEN
2. VALVES IN EASEMENTS SHALL HAVE CHANNEL POST WITNESS MARKERS WITH REFLECTIVE "GV" SIGN
3. DEEP VALVES SHALL HAVE NUT EXTENSIONS INSTALLED TO ELEVATION TO ACCOMMODATE STANDARD 10' KEY; BOTTOM NUT SHALL BE BOLTED TO VALVE NUT AND ONLY ONE SECTION
4. COMPACTION WITH MECHANICAL TAMPER AROUND VALVE BOX SHALL BE PLACED AND COMPACTED WITH 2' LIFTS TO ACHIEVE 95% COMPACTION
5. GATE VALVES LOCATED WITHIN THE CONCRETE SIDEWALK SHALL INCLUDE A METAL SEPARATOR BETWEEN THE VALVE BOX AND THE CONCRETE



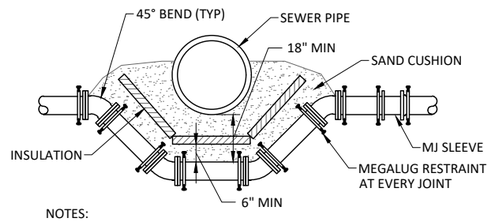
GATE VALVE BOX INSTALLATION
NOT TO SCALE



PVC WATERMAIN TRENCH
NOT TO SCALE

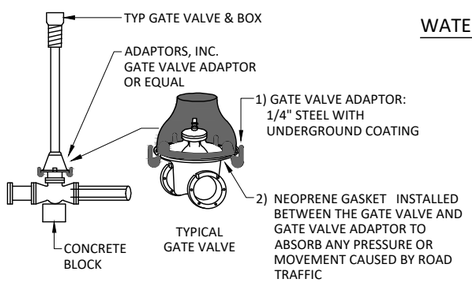


WATERMAIN INSULATION
NOT TO SCALE

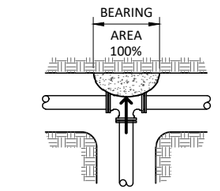


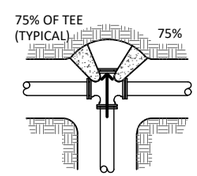
NOTES:
1. PROVIDE MEGALUG RESTRAINT AT JOINT ON BENDS AND AS SHOWN THIS DETAIL (INCIDENTAL)
2. COAT ALL ANCHORAGE AS PER SPECS
3. PROVIDE SAND CUSHION BETWEEN TOP OF WATERMAIN AND BOTTOM OF SEWER PIPE, MIN DIMENSIONS AS SHOWN THIS DETAIL (INCIDENTAL)
4. INSULATION TO BE 4" THICK POLYSTYRENE

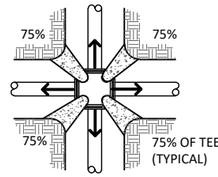
WATERMAIN OFFSET
NOT TO SCALE



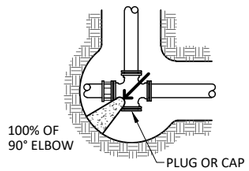
GATE VALVE ADAPTOR
NOT TO SCALE

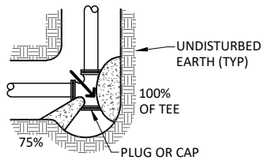


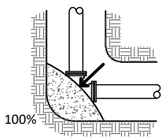


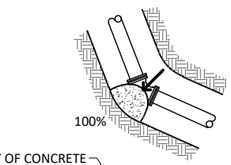


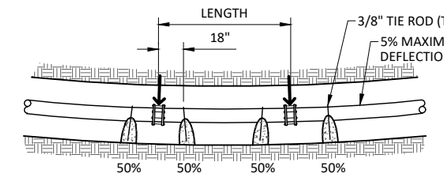
PLANS



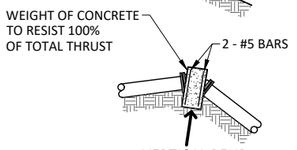




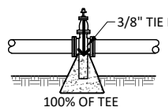




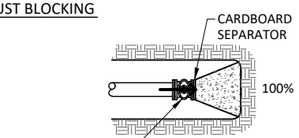
CURVE THRUST BLOCKING



VERTICAL BEND



VALVE



DEAD END

100% BEARING AREA (SQ FT)				
PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22 1/2° ELBOW
4	2.4	3.4	1.9	0.9
6	4.9	6.9	3.8	1.9
8	8.4	11.8	6.4	3.4
10	13.7	19.3	10.5	5.4
12	19.4	27.3	14.9	7.7
14	26.3	37.0	20.1	10.3
16	34.0	47.9	26.2	13.3
18	43.9	61.8	33.7	17.2
20	54.3	76.4	41.7	21.2
24	77.9	109.8	59.8	30.5

NOTE:
BEARING AREAS ARE BASED ON 250 LB MAXIMUM PRESSURE AND SOIL BEARING STRENGTH OF 2000 LB/SQ FT.

ARROWS (⟶) INDICATE THRUST DIRECTION

NOTES:
1. FIGURE (100%) AT THRUST BLOCK INDICATES PER CENT OF TOTAL THRUST TO BE APPLIED FOR BEARING AREA.
2. CONCRETE FOR THRUST BLOCKS TO BE 2000 PSI.
3. RESTRAINING RODS ARE REQUIRED AT ALL TEES AND AT BENDS DEFLECTING 22-1/2° OR MORE.
4. WRAP THE PIPE WITH POLYETHYLENE WRAPPING PRIOR TO POURING THE THRUST BLOCK.
5. SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL. IN ABSENCE OF A SOILS REPORT, AN AVERAGE SOIL (SPADABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2000 PSI.
6. THRUST BLOCKS ARE NOT REQUIRED ON PVC WITH SOLVENT WELDED JOINTS.

SIDE THRUST PER 100 LB/SQ IN PRESSURE PER DEGREE OF DEFLECTION			
PIPE SIZE	SIDE THRUST-LB	PIPE SIZE	SIDE THRUST-LB
4	35	14	377
6	72	16	486
8	122	18	665
10	197	20	790
12	278	24	1150

MULTIPLY THRUST BY DEGREE OF DEFLECTION TO OBTAIN TOTAL THRUST

CONCRETE THRUST BLOCKS
NOT TO SCALE

NOTE: DETAILS ARE NOT TO SCALE

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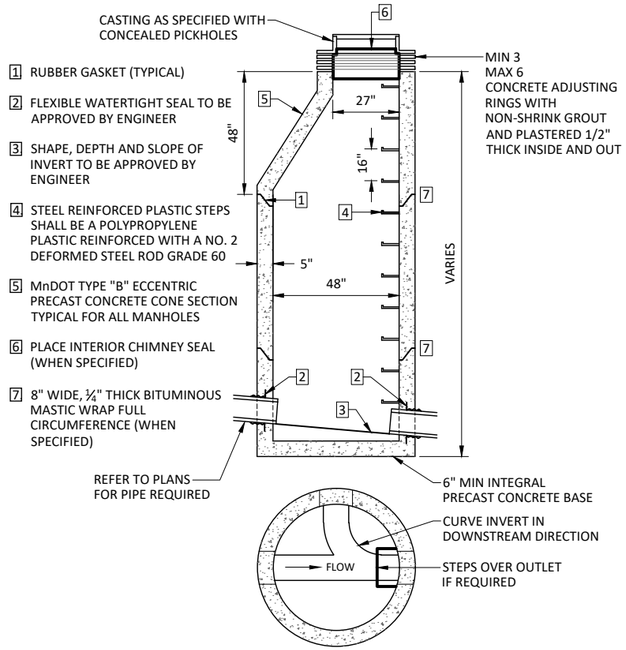
DESIGNED	JAC, DTI
DRAWN	SP, DTI
CHECKED	CWD
CLIENT PROJ. NO.	W14.115048

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T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - DETAILS

SHEET M10 OF M24

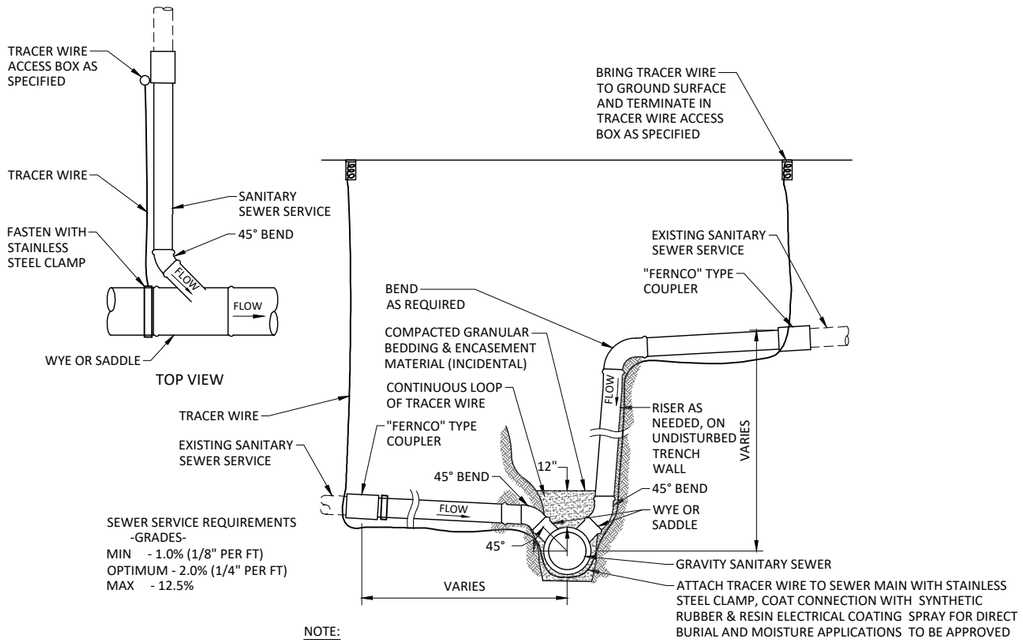
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PLAN VIEW

SANITARY MANHOLE

NOT TO SCALE

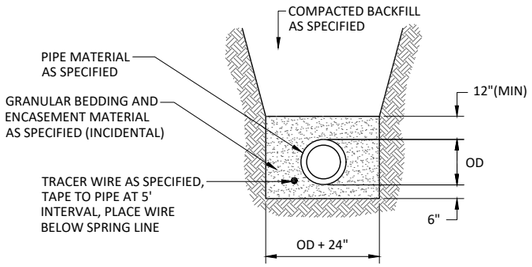


SEWER SERVICE REQUIREMENTS
-GRADES-
MIN - 1.0% (1/8" PER FT)
OPTIMUM - 2.0% (1/4" PER FT)
MAX - 12.5%

NOTE:
1. WYES, BENDS AND PIPE SIZES AS REQUIRED BY PLANS AND SPECS
2. WHERE NO EXISTING SEWER IS INPLACE, FURNISH & INSTALL PVC CAP AND MARK LOCATION WITH 4"X4"X6' TIMBER & 3/8" X 4' STEEL ROD BURY 6" BELOW FINISHED GRADE

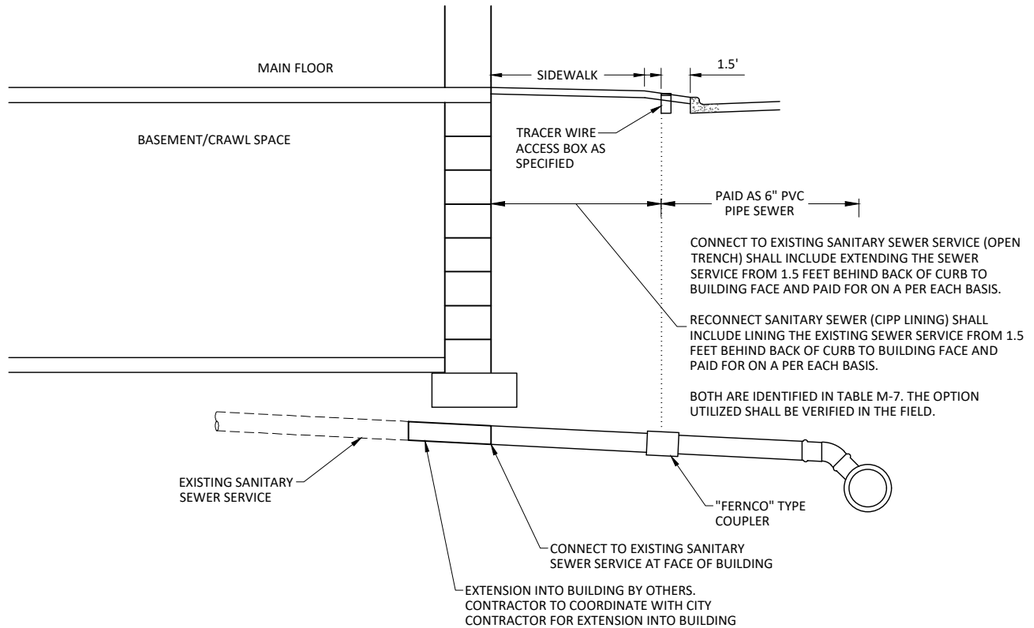
SANITARY SEWER SERVICE AND SERVICE RISER, RECONSTRUCTION, WITH TRACER WIRE ACCESS BOX

NOT TO SCALE



NON-RIGID SANITARY SEWER TRENCH

NOT TO SCALE



RECONNECT SANITARY SEWER SERVICE

NOT TO SCALE

NOTE: DETAILS ARE NOT TO SCALE

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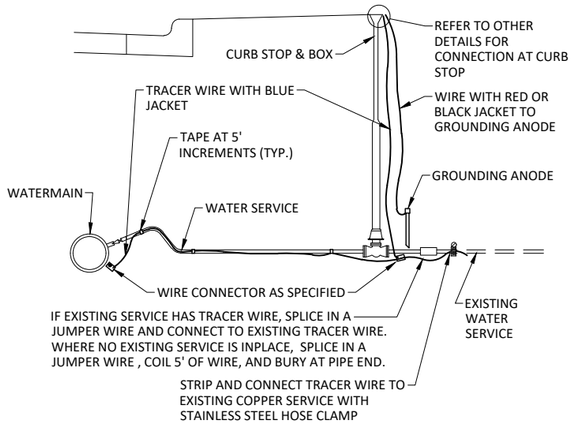
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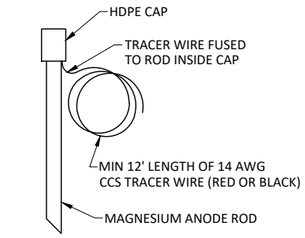
SHEET M11 OF M24

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TRACER WIRE AT WATER SERVICE INSTALLATION RECONSTRUCTION

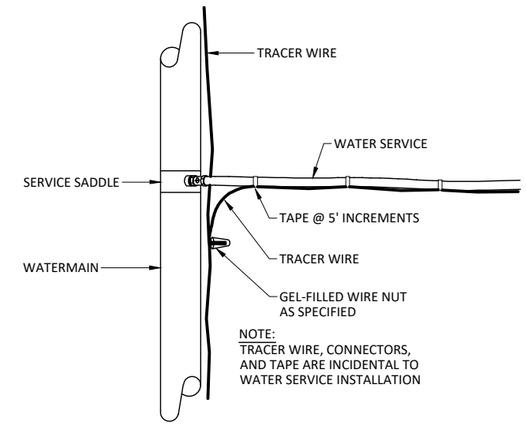
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NOTE: MAGNESIUM ROD DIMENSIONS SHALL BE APPROX 18" LONG BY 1.3" DIA, AND APPROX 1 LB IN WEIGHT.

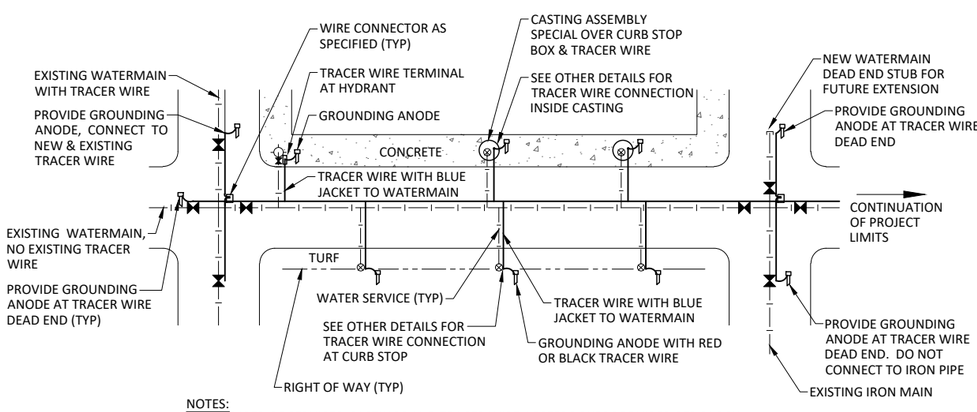
GROUNDING ANODE

NOT TO SCALE



WATER SERVICE TRACER WIRE CONNECTION

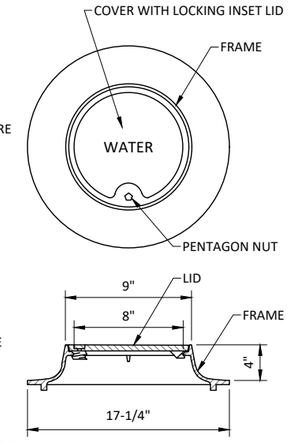
NOT TO SCALE



NOTES:
1. NUMBER OF SERVICES, CASTINGS AND TRACER WIRE ACCESS BOXES REQUIRED PER BLOCK VARIES. REFER TO UTILITY PLAN SHEETS.
2. CONNECTIONS TO EXISTING WATERMAINS AND TRACER WIRES VARY BY LOCATION.
3. DO NOT CAD WELD TRACER WIRE TO DUCTILE IRON PIPE.

TRACER WIRE SYSTEM SCHEMATIC - WATER DISTRIBUTION

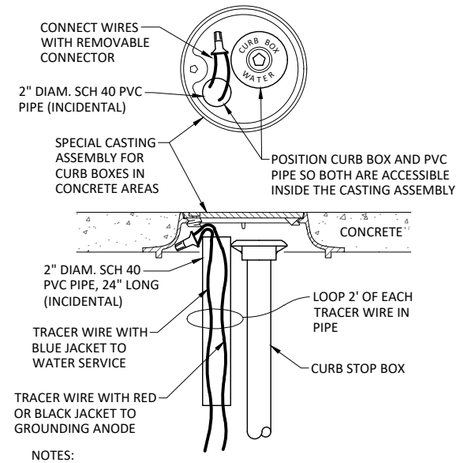
NOT TO SCALE



NOTES:
1. FURNISH AND INSTALL ON CURB STOPS THAT ARE WITHIN CONCRETE OR BITUMINOUS SURFACING
2. CASTING ASSEMBLY TO BE FORD METER BOX MODEL A1 OR APPROVED EQUAL

CASTING ASSEMBLY SPECIAL

NOT TO SCALE



NOTES:
1. SPECIAL CASTING ASSEMBLIES ARE REQUIRED ON CURB STOP BOXES THAT ARE WITHIN CONCRETE OR BITUMINOUS SURFACING.
2. TRACER WIRE ACCESS BOXES ARE NOT REQUIRED WHERE A SPECIAL CASTING ASSEMBLY IS FURNISHED & INSTALLED.

TRACER WIRE AT CURB BOX, INSIDE CASTING ASSEMBLY SPECIAL

NOT TO SCALE

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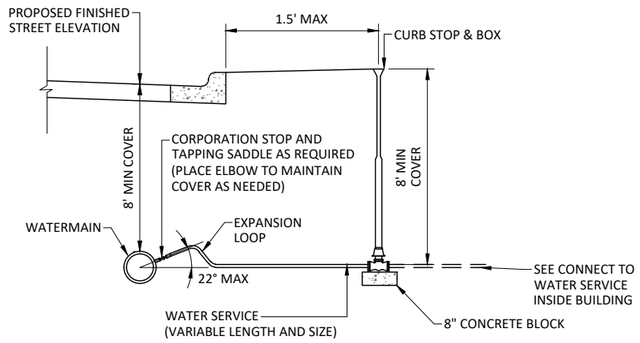
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T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - DETAILS

SHEET M12 OF M24



NOTE: WHERE NO EXISTING WATER SERVICE IS INPLACE, INSTALL 0.5' FLARED & CRIMPED COPPER SERVICE LINE AND STEEL "T" FENCE POST AT CURB STOP

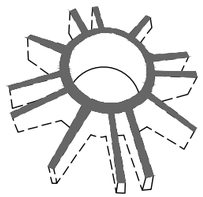
WATER SERVICE INSTALLATION RECONSTRUCTION

NOT TO SCALE

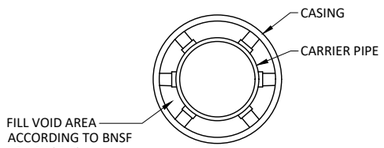
NOTES:
1. BUILDING FOUNDATION MATERIALS VARY FROM RED BRICK, CONCRETE BLOCK, POURED IN PLACE, TO 18" THICK BACKPLASTERED LIMESTONE.
2. CONNECT TO EXISTING PLUMBING, ADJUSTING EXISTING PIPING AS REQUIRED. PLUMBING SHALL MEET CURRENT MINNESOTA PLUMBING CODE. (INCIDENTAL TO RECONNECT WATER SERVICE OR CONNECT TO EXISTING WATER SERVICE)
3. IF ELECTRICAL SERVICE GROUND IS ATTACHED TO EXISTING WATER SERVICE, FURNISH AND INSTALL NEW GROUND RODS. DISCONNECT GROUND WIRE FROM SERVICE AND RECONNECT TO NEW GROUND ROD. (INCIDENTAL TO RECONNECT WATER SERVICE OR CONNECT TO EXISTING WATER SERVICE)
4. FURNISH & INSTALL TRACER WIRE AS DETAILED.

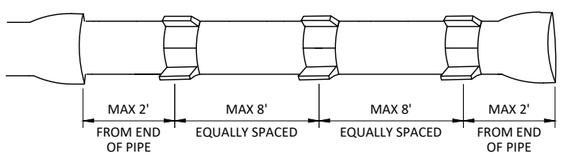
CONNECT TO EXISTING WATER SERVICE
- CONNECT TO EXISTING WATER SERVICE AT WALL FOUNDATION.
- SEAL WATERTIGHT AROUND NEW PIPE.

RECONNECT WATER SERVICE (BY OTHERS)
- HORIZONTALLY DIRECTIONALLY DRILL NEW WATER SERVICE PIPE
- SAW AND REMOVE CONCRETE FLOOR TO CONNECT TO SERVICES LOCATED BELOW THE BASEMENT FLOOR.
- BACKFILL, COMPACT AND REPLACE CONCRETE FLOOR. CLEAN SITE AND RETURN BASEMENT TO SAME CONDITION EXISTING PRIOR TO INSTALLATION



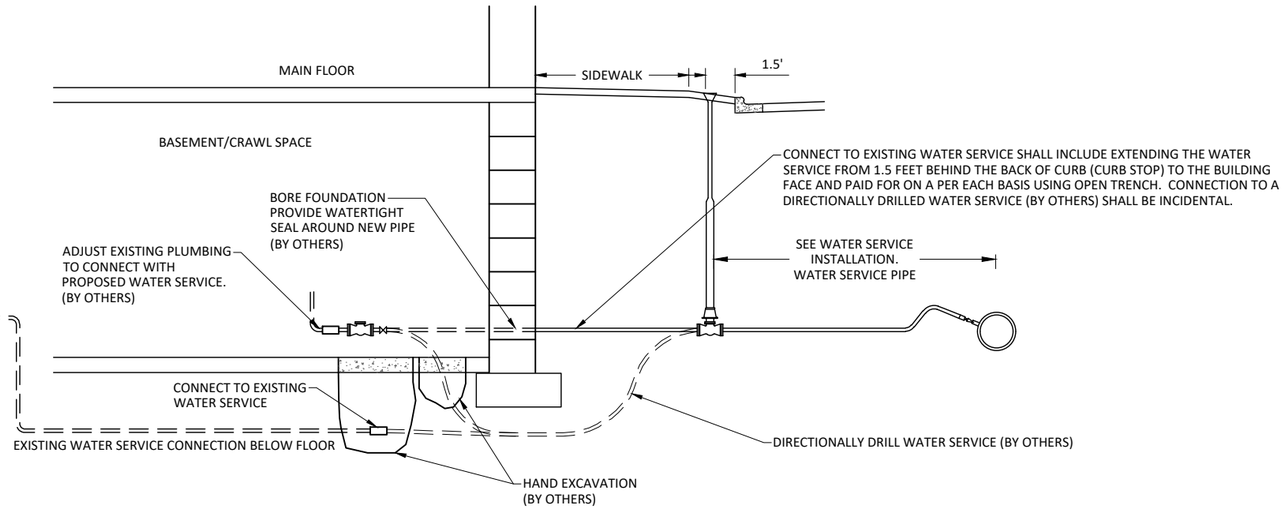
PHOENIX PLASTIC CASING SPACER OR APPROVED EQUAL





WATERMAIN PIPE SUPPORT IN CASING, PLASTIC SPACERS

NOT TO SCALE



CONNECT ALL WATER SERVICES INSIDE BUILDINGS

NOT TO SCALE

NOTE: DETAILS ARE NOT TO SCALE

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SANITARY & WATER PLANS - DETAILS

SHEET M13 OF M24

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F & I:
101+98.55 - 11.61' RT
1 EA 16"X12" TEE (ROTATED)
1 EA 16" SLEEVE
1 EA 10" SLEEVE
1 EA 12" SLEEVE
1 EA 10" GV & BOX
1 EA 16" BV & BOX
1 EA 16"X10" REDUCER
1 EA 16" 45° BEND (VERTICAL)
3 EA 10" 45° BEND (VERTICAL)
2 EA 12" 45° BEND (VERTICAL)
3 EA CONNECT TO EXISTING WM

NOTE:
FIELD VERIFY SANITARY INVERT ELEVATION AT CONNECTIONS (INCIDENTAL).
FIELD VERIFY EXISTING WATERMAIN INVERT ELEVATIONS AT CONNECTIONS (INCIDENTAL).
CONTRACTOR SHALL FIELD VERIFY WATERMAIN OFFSET INVERTS. PROVIDE 18" SEPARATION.

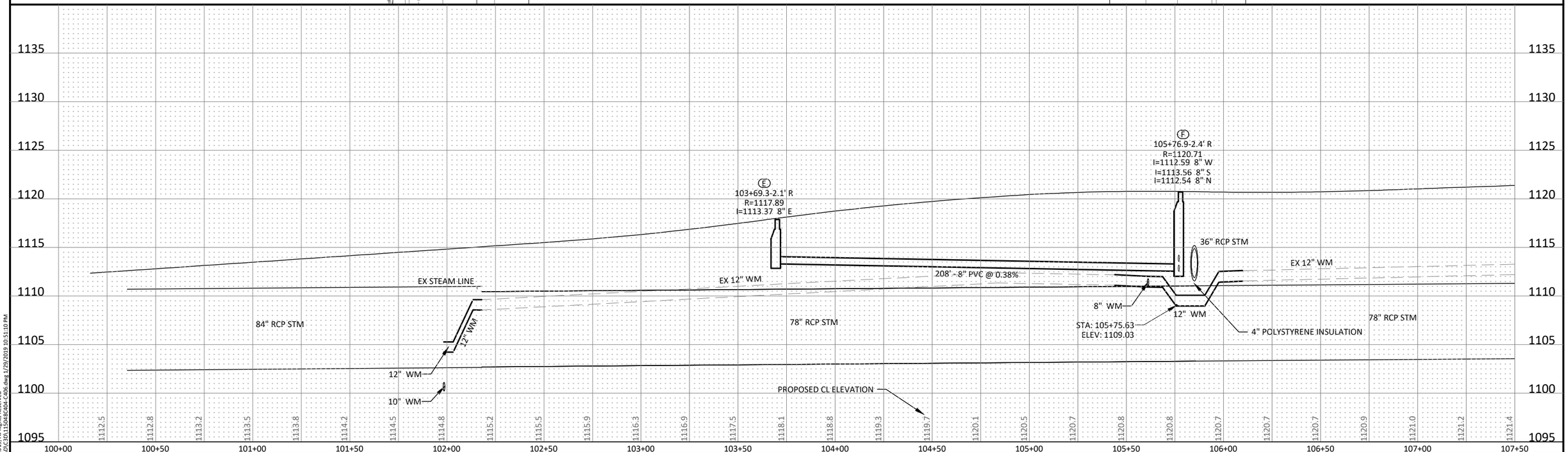
NOTE:
FURNISH & INSTALL NEW CORPORATION STOP ON EXISTING WATERMAIN. PLUG OLD CORPORATION STOP (INCIDENTAL).
EXISTING CORPORATION STOP MAY BE UTILIZED.

WATER SERVICE (TYP)
REPLACE SERVICE WITH WYE
WEST 4TH ST
EX 10" WM
47 LF 10" WM
EX 4" WM
8" PVC
41 LF 8" WM
8" PVC
23 LF 12" WM
49 LF 12" WM
10 LF 8" WM
31 LF 12" WM
23 LF 16" WM
PROTECT WATERMAIN (INCIDENTAL)
PROTECT WATERMAIN (INCIDENTAL)
EX 16" WM
NORTH DONNELLY AVE
EXISTING STEAM LINE
NORTH AUSTIN AVE
EX 8" SAN
EX 4" WM

NOTE:
ALL UTILITIES NOT SHOWN TO BE REMOVED AND REPLACED SHALL BE PROTECTED DURING CONSTRUCTION. ANY ADDITIONAL REMOVAL AND REPLACEMENT OF UTILITIES (INCLUDING SANITARY SEWER, WATERMAIN, ETC.) SHALL BE INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT AND NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.

F & I:
105+60.88 - 12.78' RT
1 EA 12"X8" CROSS
2 EA 8" GV & BOX
2 EA 8"X4" REDUCER
2 EA 4" SLEEVE
2 EA 12" SLEEVE
4 EA 8" 45° BEND (VERTICAL)
4 EA 12° BEND (VERTICAL)
4 EA CONNECT TO EXISTING WM

FE01 · MH01 · MH02 · MH03 · MH04 · CB01 · CB02 · CB03 · CB04 · CB05



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VERT. SCALE 0 5 10 FEET

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SANITARY & WATER PLANS - PLAN & PROFILE

SHEET M14 OF M24

NOTE:
FIELD VERIFY SANITARY INVERT ELEVATION AT CONNECTIONS (INCIDENTAL).
FIELD VERIFY EXISTING WATERMAIN INVERT ELEVATIONS AT CONNECTIONS (INCIDENTAL).
CONTRACTOR SHALL FIELD VERIFY WATERMAIN OFFSET INVERTS. PROVIDE 18" SEPARATION.

NOTE:
FURNISH & INSTALL NEW CORPORATION STOP ON EXISTING WATERMAIN. PLUG OLD CORPORATION STOP (INCIDENTAL). EXISTING CORPORATION STOP MAY BE UTILIZED.

F & I:
114+86.82 - 10.03' RT
1 EA 6" GV & BOX
1 EA CONNECT TO EXISTING WM

NOTE:
CONTRACTOR SHALL COORDINATE WITH OWNER AND LITCHFIELD HOUSING AND REDEVELOPMENT AUTHORITY BUILDING PERSONNEL FOR WATER CONNECTION.

WATER SERVICE (TYP)

EX 4" WM
EX 8" SAN
MH06
CB09
G
8" PVC
40 LF 8" WM
19 LF 12" WM
MH05
CB08
CB06
CB07
8 LF 12" WM
23 LF 8" WM
EX 8" SAN
EX 18" HDPE
NORTH SWIFT AVE

PROTECT WATERMAIN (INCIDENTAL)

F & I:
109+36.43 - 10.22' RT
1 EA 12"X8" CROSS
2 EA 8" GV & BOX
2 EA 4" SLEEVE
2 EA 12" SLEEVE
2 EA 8"X4" REDUCER
4 EA 8" 45° BEND (VERTICAL)
4 EA CONNECT TO EXISTING WM

NOTE:
ALL UTILITIES NOT SHOWN TO BE REMOVED AND REPLACED SHALL BE PROTECTED DURING CONSTRUCTION. ANY ADDITIONAL REMOVAL AND REPLACEMENT OF UTILITIES (INCLUDING SANITARY SEWER, WATERMAIN, ETC.) SHALL BE INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT AND NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.

PROTECT WATERMAIN (INCIDENTAL)

F & I:
113+05.84 - 10.01' RT
1 EA 12"X8" CROSS
2 EA 8" GV & BOX
2 EA 4" SLEEVE
2 EA 12" SLEEVE
2 EA 8"X4" REDUCER
4 EA CONNECT TO EXISTING WM

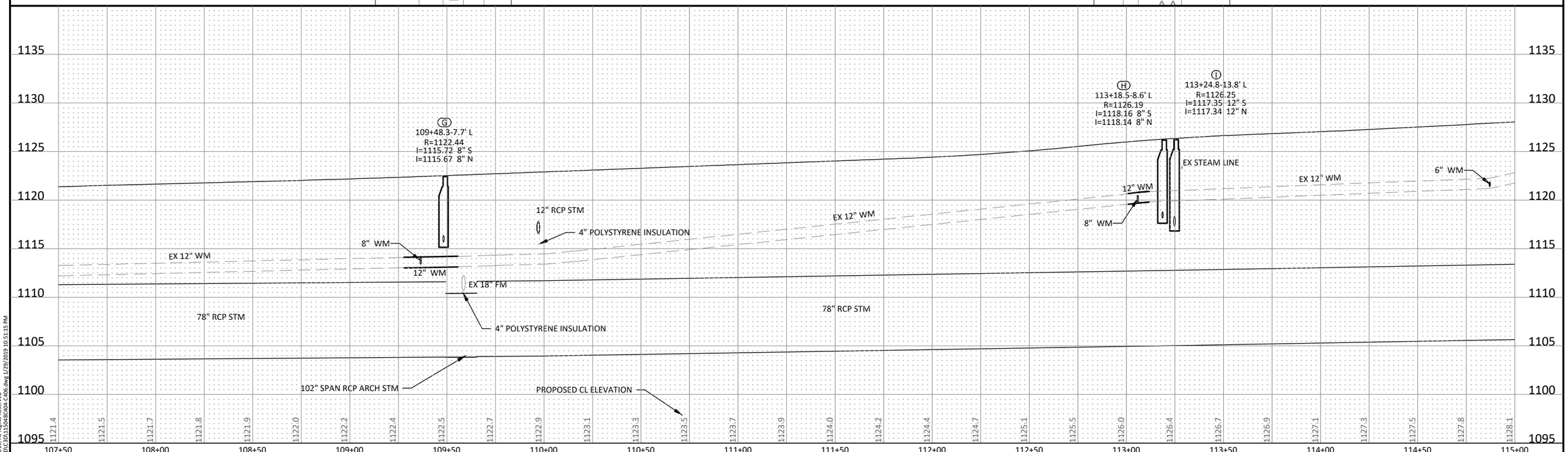
EX 4" WM
EX 8" SAN
EX 12" SAN
25 LF 4" WM
8" PVC
12" PVC
H
I
41 LF 8" WM
5 LF 12" WM
12 LF 8" WM
MH07
EX 4" WM
EX 8" SAN
EX 12" SAN
NORTH MILLER AVE

WEST 4TH ST

40 LF 6" WM

PROTECT WATERMAIN (INCIDENTAL)

EXISTING STEAM LINE



HORZ. SCALE 0 25 50 FEET
VERT. SCALE 0 5 10 FEET

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CHUCK DEWOLF, P.E.
LIC. NO. 40931 DATE 12/21/2018

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www.bolton-menk.com

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DRAWN SP, DTI
CHECKED CWD
CLIENT PROJ. NO. W14.115048

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T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - PLAN & PROFILE

SHEET M15 OF M24

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NOTE:
FURNISH & INSTALL NEW CORPORATION STOP ON EXISTING WATERMAIN. PLUG OLD CORPORATION STOP (INCIDENTAL). EXISTING CORPORATION STOP MAY BE UTILIZED.

WATER SERVICE (TYP)

F & I:
116+79.83 - 32.45' RT
1 EA 10"X4" TEE
1 EA 10" GV & BOX
1 EA 4" SLEEVE
1 EA 10" SLEEVE
2 EA 4" 45° BEND
9 LF 4" WM
2 EA CONNECT TO EXISTING WM

NOTE:
FIELD VERIFY SANITARY INVERT ELEVATION AT CONNECTIONS (INCIDENTAL).
FIELD VERIFY EXISTING WATERMAIN INVERT ELEVATIONS AT CONNECTIONS (INCIDENTAL).
CONTRACTOR SHALL FIELD VERIFY WATERMAIN OFFSET INVERTS. PROVIDE 18" SEPARATION.

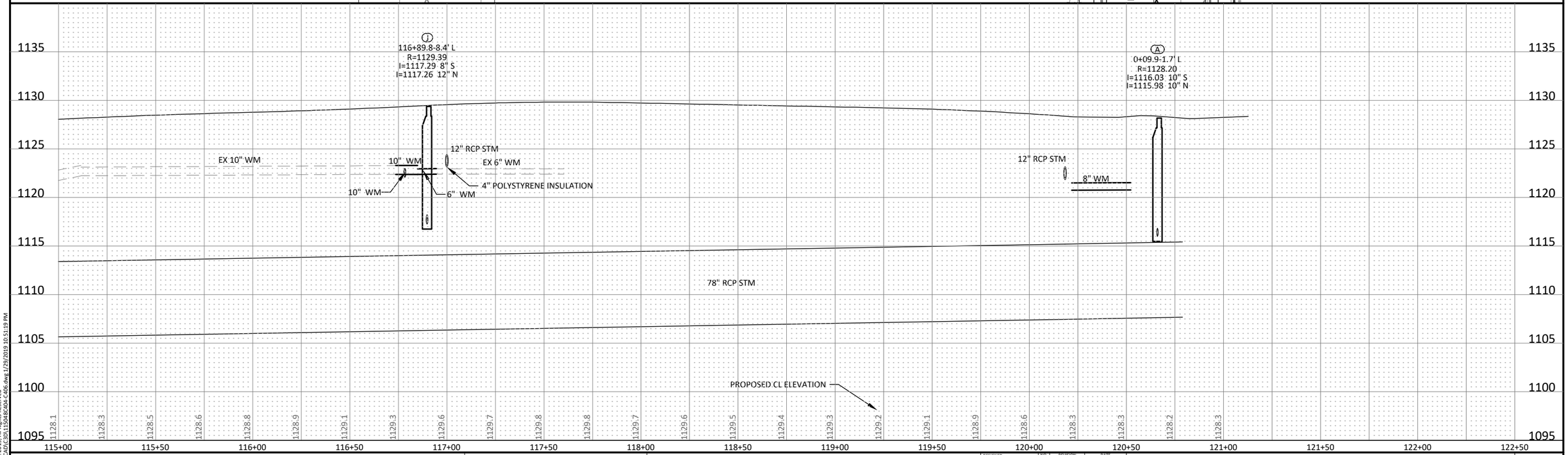
EX 6" WM
EX 10" SAN
TH 12
NORTH SIBLEY AVE
CB12
CB13
CB16
MH09
MH10
CB17
CB18
CB14
CB15
4TH ST.
WEST 4TH ST
EOI
EX 10" WM
5 LF 10" WM
43 LF 10" WM
MH08
CB10
CB11
23 LF 10" WM
EX 8" SAN
NORTH RAMSEY AVE
PROTECT WATERMAIN (INCIDENTAL)

NOTE:
ALL UTILITIES NOT SHOWN TO BE REMOVED AND REPLACED SHALL BE PROTECTED DURING CONSTRUCTION. ANY ADDITIONAL REMOVAL AND REPLACEMENT OF UTILITIES (INCLUDING SANITARY SEWER, WATERMAIN, ETC.) SHALL BE INCIDENTAL TO THE CONSTRUCTION OF THE PROJECT AND NO DIRECT PAYMENT WILL BE MADE FOR THIS WORK.

F & I:
116+77.90 - 10.77' RT
1 EA 10"X10" CROSS
1 EA 10"X4" REDUCER
1 EA 10"X6" REDUCER
1 EA 10" GV & BOX
1 EA 6" GV & BOX
1 EA 4" SLEEVE
1 EA 10" SLEEVE
7 LF 10" WM
10 LF 6" WM
3 EA CONNECT TO EXISTING WM

PROTECT WATERMAIN (INCIDENTAL)

NOTE:
CONTRACTOR SHALL COORDINATE WITH OWNER AND MEEKER COUNTY BUILDING PERSONNEL FOR WATER CONNECTION.



HORZ. SCALE 0 25 50 FEET
VERT. SCALE 0 5 10 FEET

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F & I:
STA 0.02+18, 11.86' RT
1 EA 6" SLEEVE
1 EA 8" x 6" REDUCER
1 EA 8" GV & BOX
4 LF 6" WM
1 EA CONNECT TO EXISTING WM

F & I:
STA 0+42.92, 12.00' RT
1 EA 8" x 8" TEE
1 EA 8" GV & BOX

NOTE:
FIELD VERIFY SANITARY INVERT ELEVATION AT CONNECTIONS (INCIDENTAL).
FIELD VERIFY EXISTING WATERMAIN INVERT ELEVATIONS AT CONNECTIONS (INCIDENTAL).
CONTRACTOR SHALL FIELD VERIFY WATERMAIN OFFSET INVERTS. PROVIDE 18" SEPARATION.

F & I:
STA 5+17.74, 12.00' RT
1 EA 8" x 6" TEE
1 EA 6" GV & BOX
1 EA 8" GV & BOX
15 LF 6" WM
STA 5+17+74, 27.05' RT
1 EA HYDRANT (8.5' BURY)
G=1130.84

CONNECT TO EXISTING WM

F & I:
STA 4+65.19, 51.73' LT
1 EA 4" SLEEVE
1 EA 8" x 4" REDUCER
1 EA 8" GV & BOX
4 LF 4" WMN
CONNECT TO EXISTING WM

E. 4TH STREET

E. 3RD STREET

CONNECT TO EXISTING SANITARY

CONNECT TO EXISTING WM

N. SIBLEY AVE. / TH 12

40 LF 8" WM | 42 LF 8" WM | 106 LF 8" WM | 276 LF 8" WM | 60 LF 8" WM | 53 LF 8" WM | 386 LF 8" WM | 26 LF 8" WM

8" PVC

EX 8" SAN

CB12 CB13 CB14 CB15 CB16 CB17 CB18 CB19 CB20 CB21 CB22 CB23 CB24 CB25 CB26 CB27 CB28 CB29

MH09 MH10 MH11 MH14

W. 4TH STREET

W. 3RD STREET

F & I:
STA 0+46.80, 56.18' RT
1 EA 8" CAP
1 EA 8" GV & BOX

F & I:
STA 0+83.69, 12.00' RT
1 EA 8" x 6" TEE
1 EA 6" GV & BOX
17 LF 6" WM
STA 0+83.69. 28.55' RT
1 EA HYDRANT (8.5' BURY)
G=1128.87

325
4"? MATERIAL N/A SAN
2" 4" D.I.P. WATER MAINS
(FIRE PROTECTION & DOMESTIC)

CONNECT TO EXISTING WM

F & I:
STA 1+89.31, 12.00' RT
1 EA 8" x 4" TEE
1 EA 4" GV & BOX
27 LF 4" WM
1 EA CONNECT TO EXISTING WM

NOTE:
CONTRACTOR SHALL COORDINATE WITH OWNER AND MEEKER COUNTY BUILDING PERSONNEL FOR WATER CONNECTION.

311
NO RECORD ON SAN
3/4"± COPPER? WATER

309
4"? CAST IRON SAN
3/4"± COPPER WATER

F & I:
STA 4+65.13, 38.15' RT
1 EA 8" SLEEVE
1 EA 8" GV & BOX
CONNECT TO EXISTING WM

305
NO RECORD ON SERVICES

301
NO RECORD ON SERVICES

F & I:
STA 4+65.17, 12.00' RT
1 EA 8" x 8" CROSS
1 EA 8" GV & BOX
CONNECT TO EXISTING WM

241
NOT PRESENT SAN
1"± GALVANIZED STEEL WATER

237
3" PVC SAN
1"± MATERIAL NOT VERIFIED
WATER

231
4"± CAST IRON SAN
1"± COPPER WATER

229
NO RECORD ON SERVICES

227
NO RECORD ON SAN
1"± COPPER? WATER

225
NO RECORD ON SERVICES

223
NO RECORD ON SAN

242
NO RECORD ON SAN
1"± COPPER? WATER

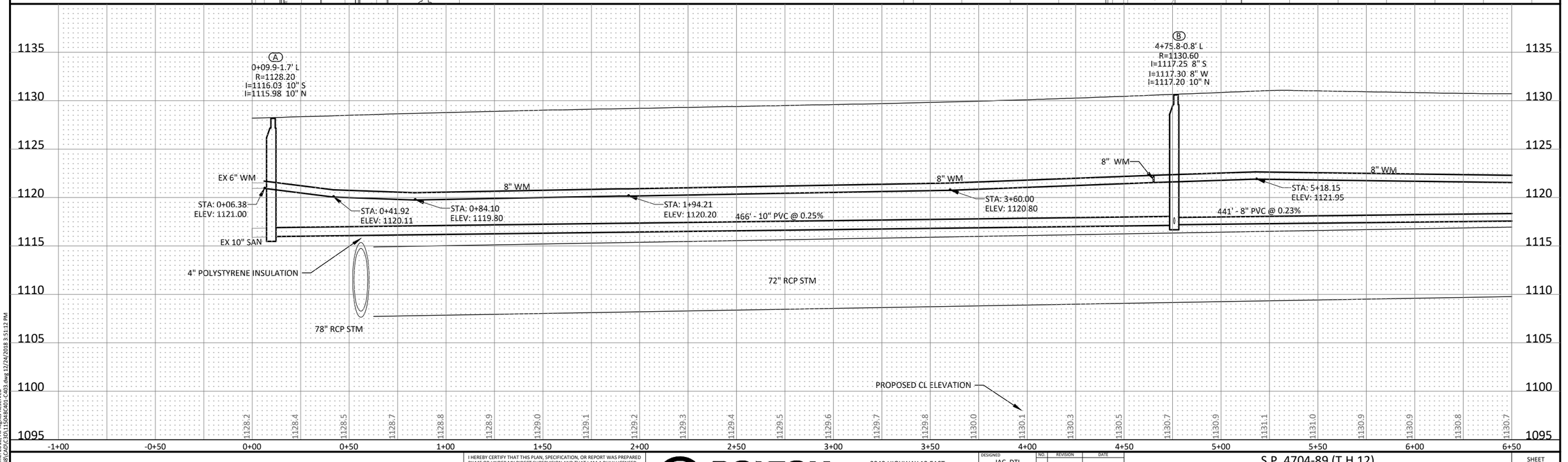
240
SERVICES NOT PRESENT

236
4"CAST IRON SAN
1"± STEEL & COPPER WATER

234
4" CAST IRON SAN
NO RECORD ON WATER

230
4" PVC SAN
1"± COPPER WATER

226
NO RECORD ON SAN



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HORZ. SCALE 0 25 50 FEET
VERT. SCALE 0 5 10 FEET

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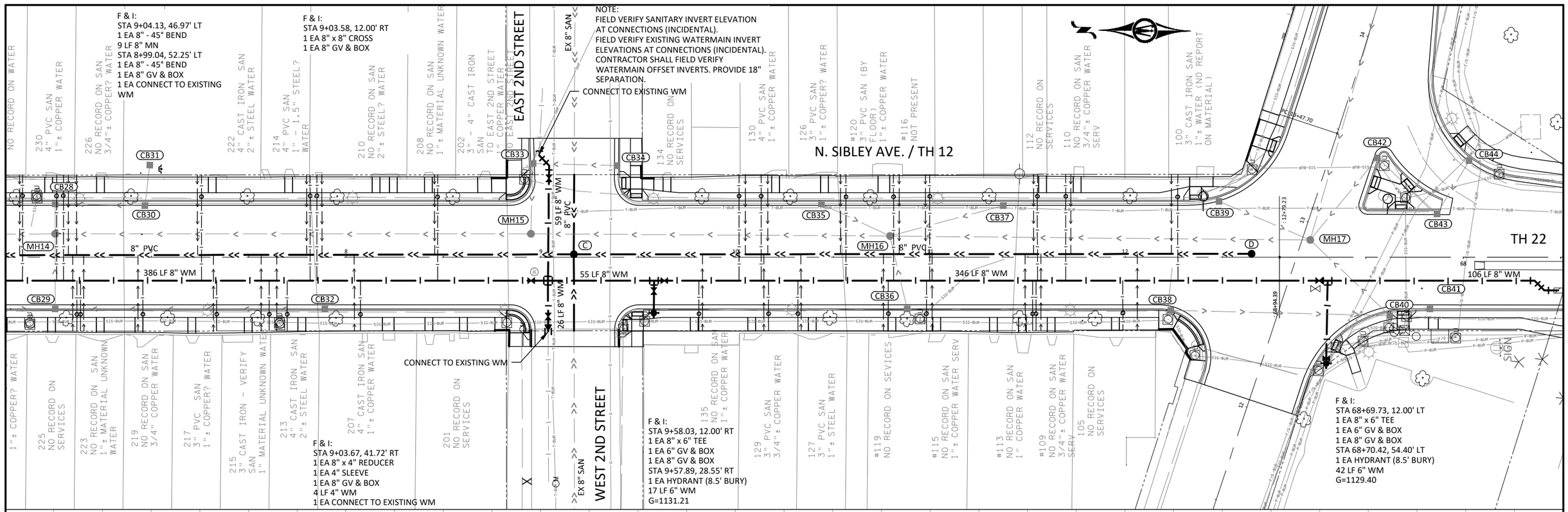
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SHEET M17 OF M24



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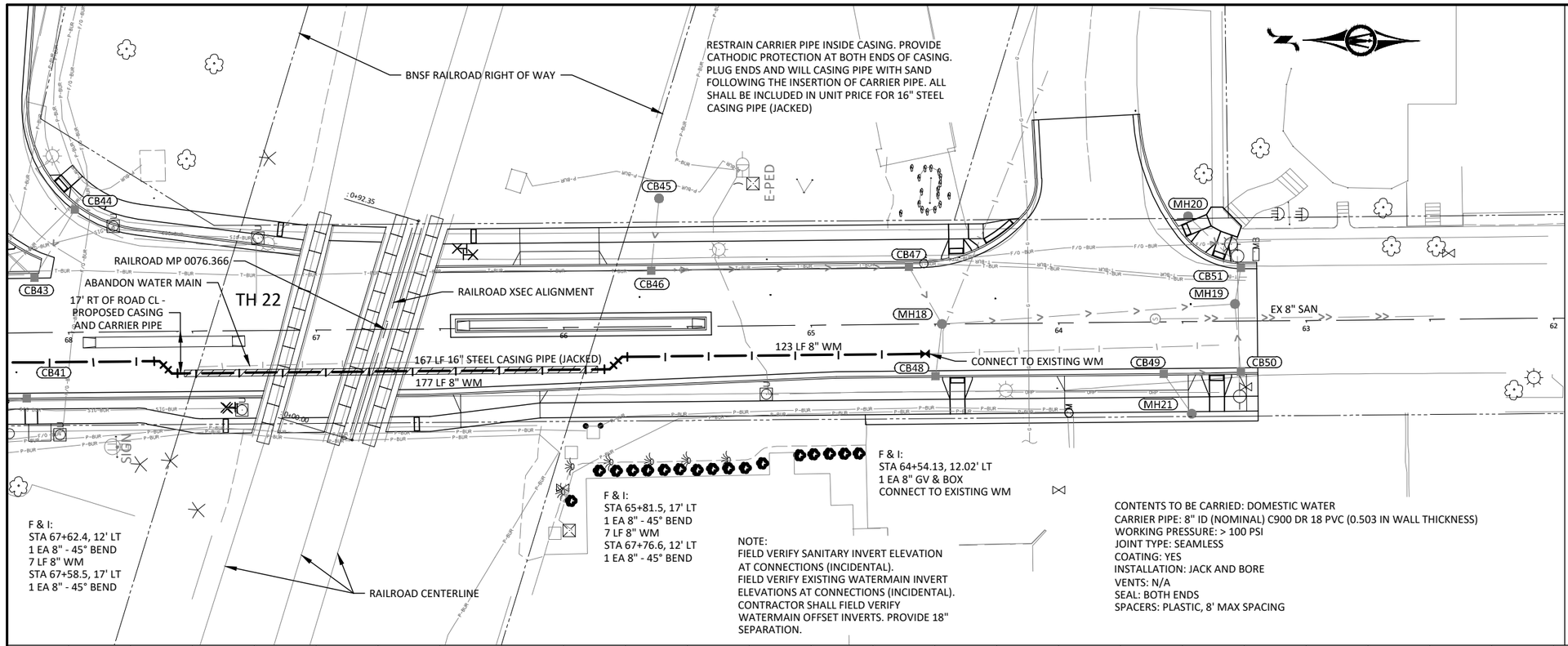
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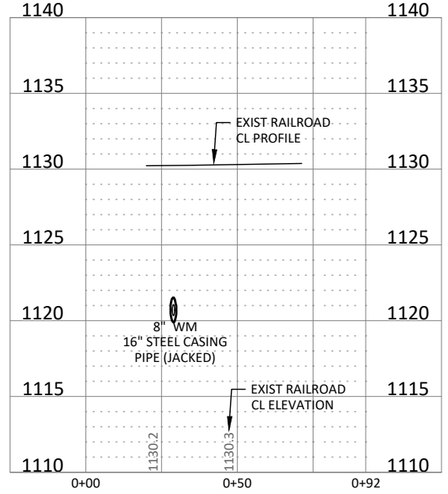
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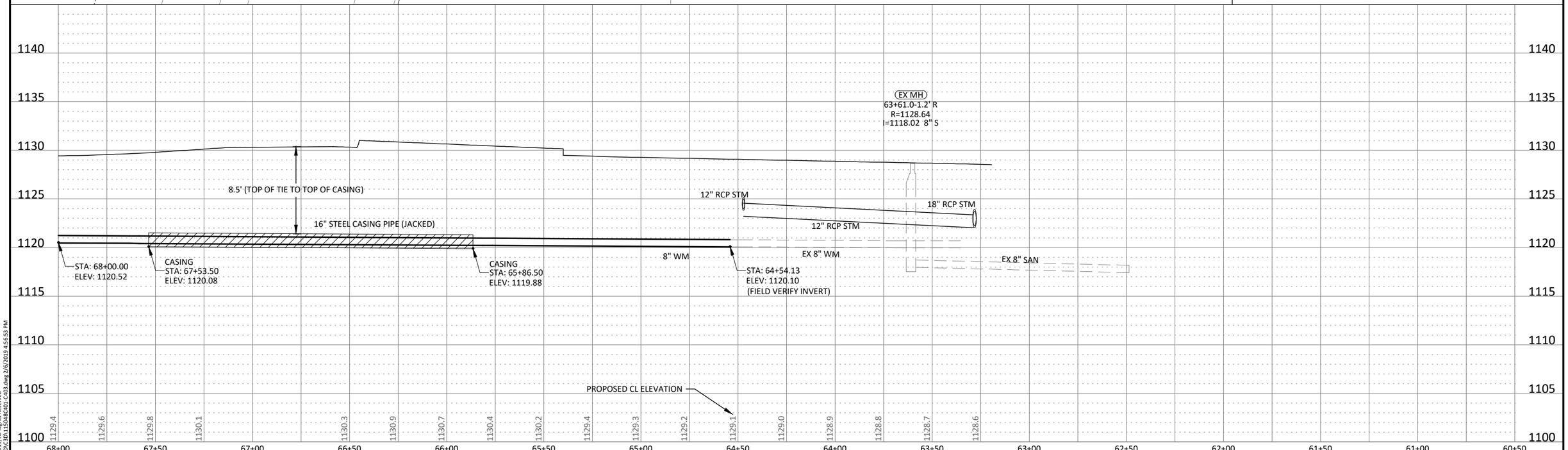
SHEET M18 OF M24



RR XSEC ALIGNMENT



HORZ. SCALE 0 25 50 FEET
VERT. SCALE 0 5 10 FEET



HORZ. SCALE 0 25 50 FEET
VERT. SCALE 0 5 10 FEET

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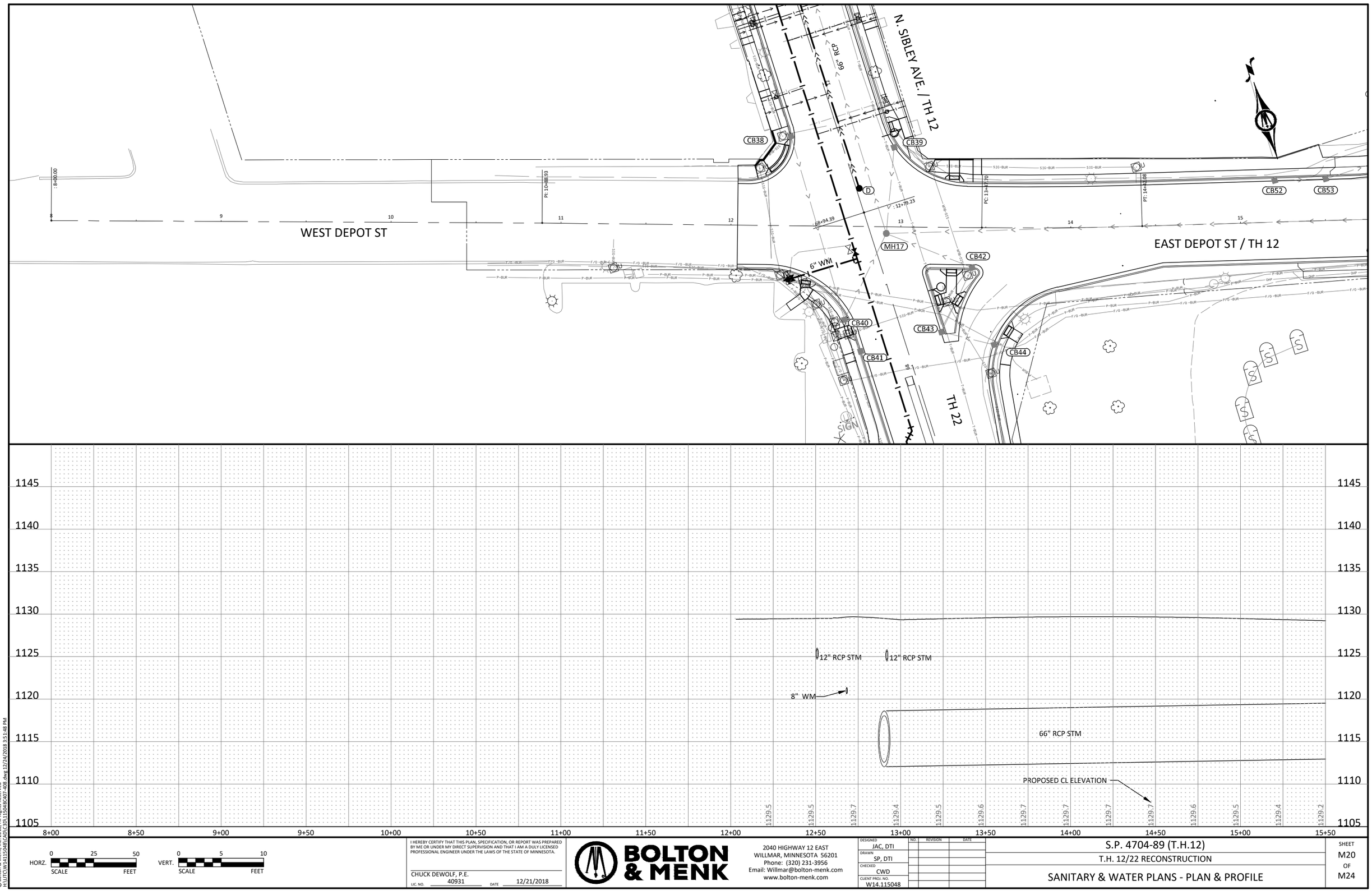
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MARSHALL AVE

1ST ST E

EX 8" WM

CONNECT TO EXISTING MANHOLES (SAN)

EX SAN MH
R=1124.60
I=1121.56 6" S
I=1121.36 8" N

CB55 CB54 CB53 MH23 MH22 CB56 CB57 CB58 CB59 CB60 CB61 MH24 CB62 CB63 CB64

PC: 17+22.36

PT: 18+22.56

SANITARY SERVICE STUB
70' 6" PVC @ 2.00%

PROTECT EXISTING 2" WATER SERVICE
DURING CONSTRUCTION (INCIDENTAL)

EAST DEPOT ST / TH 12

HOLCOMBE AVE

EX 8" WM

MH27 CB72 CB71 MH25 CB70 CB69 MH26 CB68 CB67 CB66 CB65

F & I:
20+58.39 - 26.89' LT
42 LF 8" WM
1 EA 8" SLEEVE
4 EA 8" 45° BEND (VERTICAL)
2 EA CONNECT TO EXISTING WM

EX 8" WM

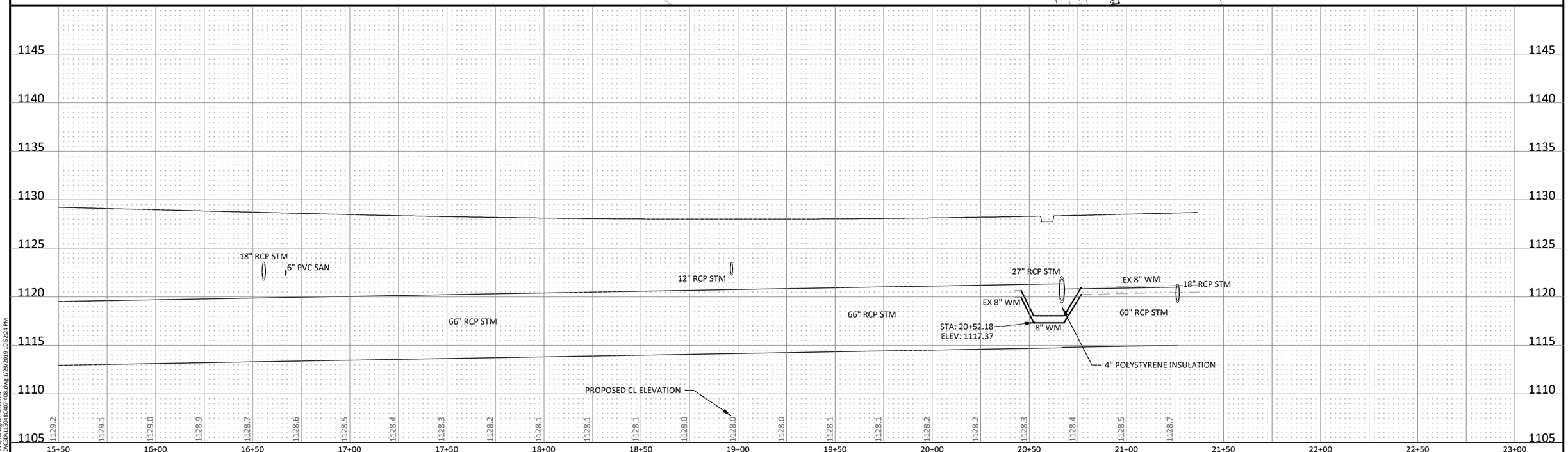
8" WM

NOTE:
THE FOLLOWING SHALL BE INCLUDED FOR THE UNIT PRICE FOR CONNECT TO EXISTING MANHOLES (SAN).

24" #4 IRON BAR AT STUB LOCATION AS DIRECTED BY THE ENGINEER.

6' X 4" X 4" POST AT STUB LOCATION AS DIRECTED BY THE ENGINEER.

1 EA 6" WATER TIGHT CAP FOR STUB.



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HORZ. 0 25 50 SCALE FEET

VERT. 0 5 10 SCALE FEET

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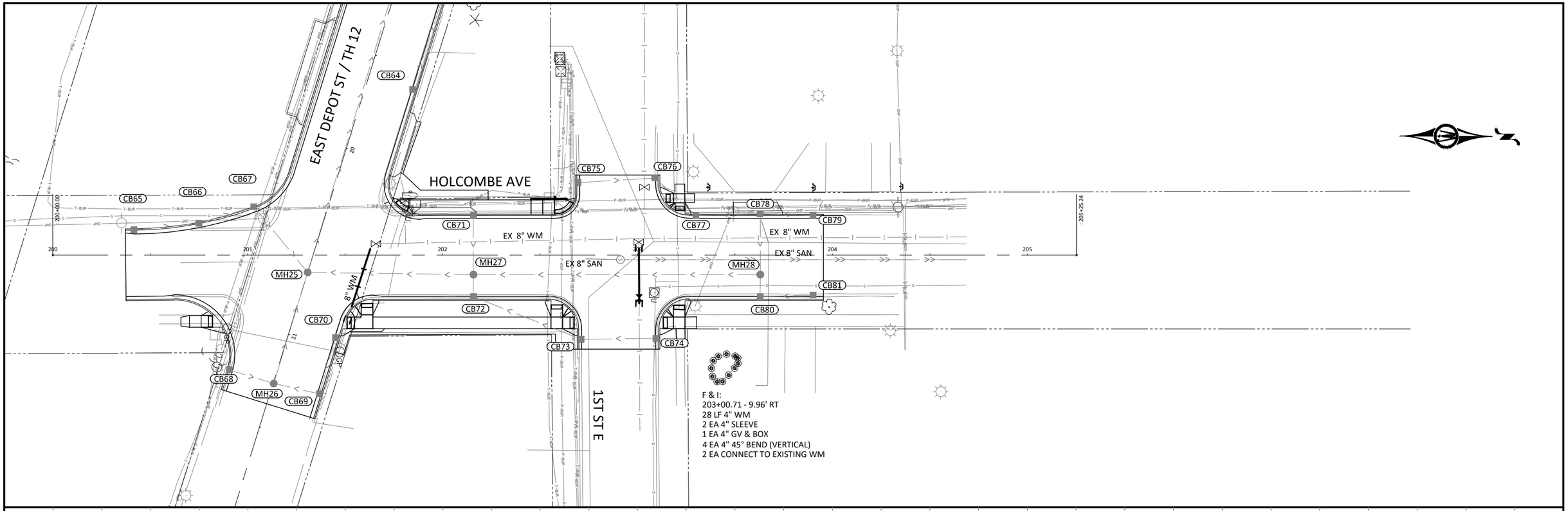
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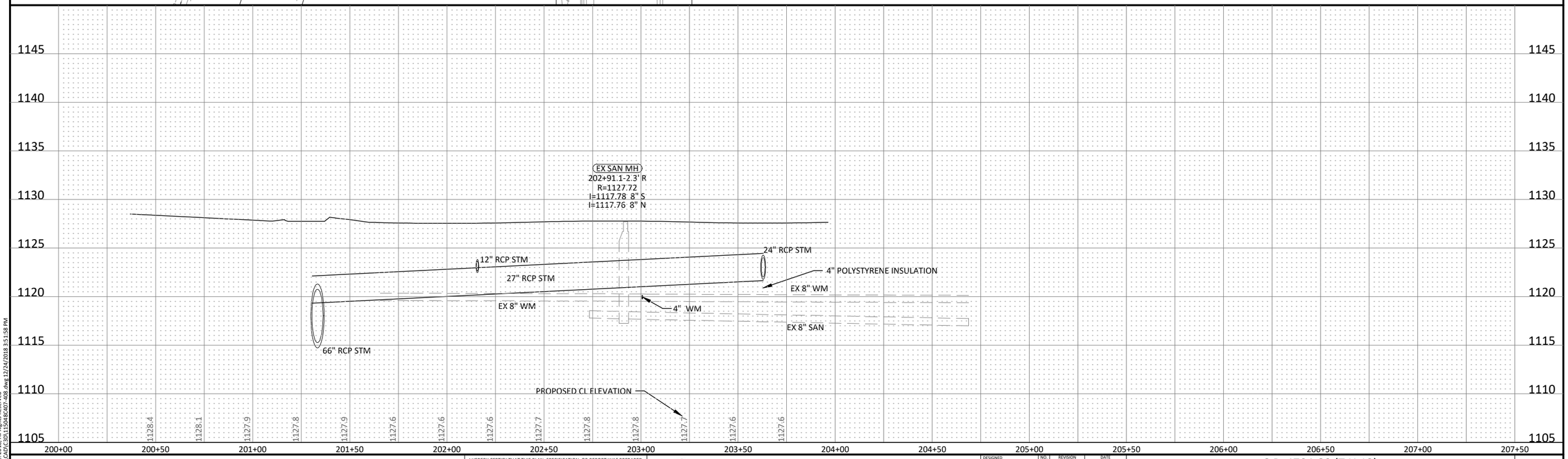
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HORZ. 0 25 50 SCALE FEET
VERT. 0 5 10 SCALE FEET

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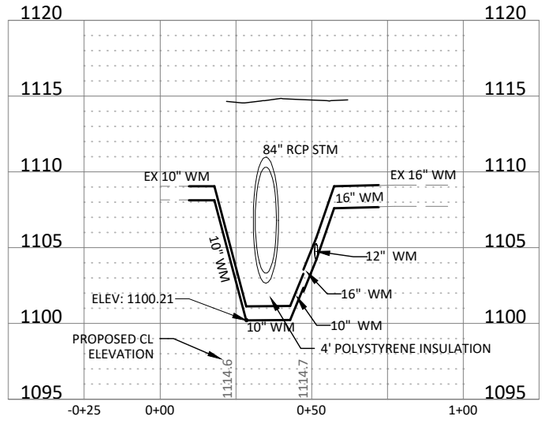
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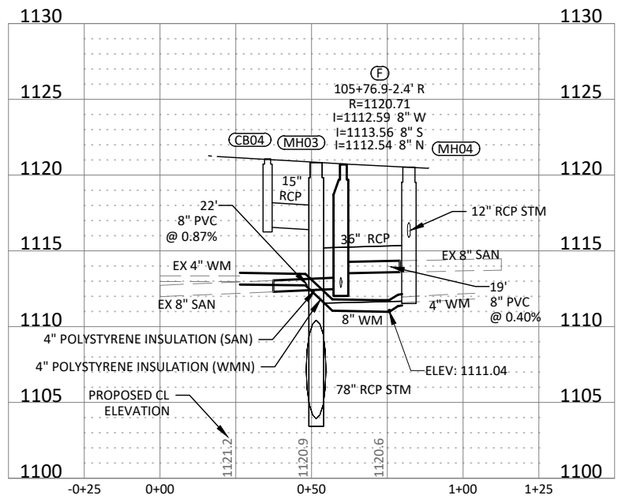
SHEET M22 OF M24

NOTE:
FIELD VERIFY SANITARY INVERT ELEVATION AT CONNECTIONS (INCIDENTAL).
FIELD VERIFY EXISTING WATERMAIN INVERT ELEVATIONS AT CONNECTIONS (INCIDENTAL).
CONTRACTOR SHALL FIELD VERIFY WATERMAIN OFFSET INVERTS. PROVIDE 18" SEPARATION.

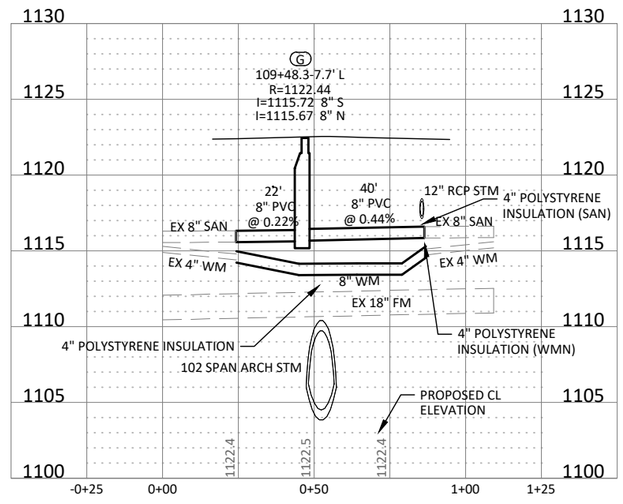
N DONNELLY AVE



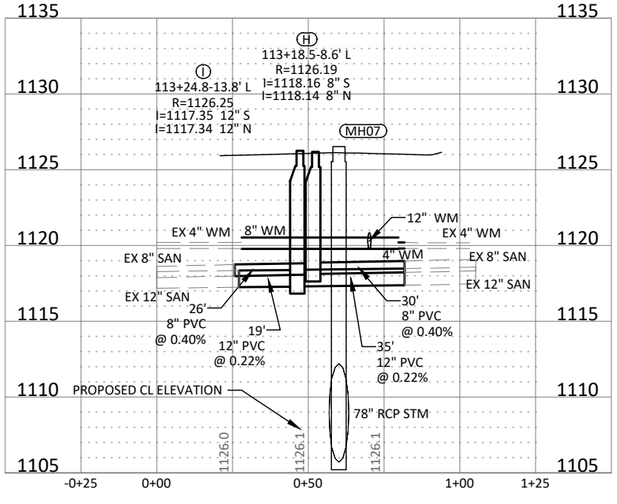
N AUSTIN AVE



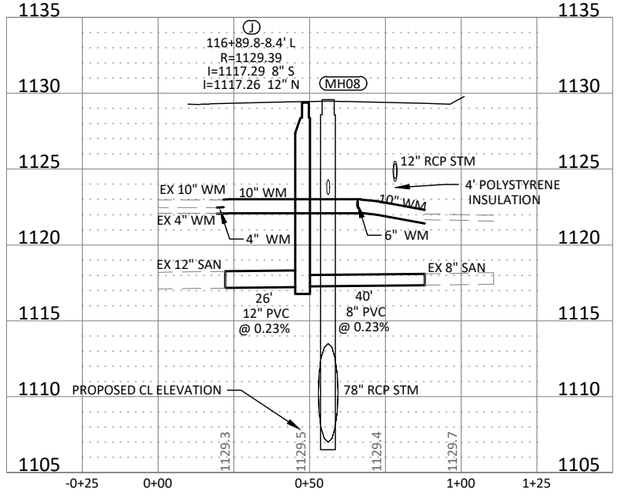
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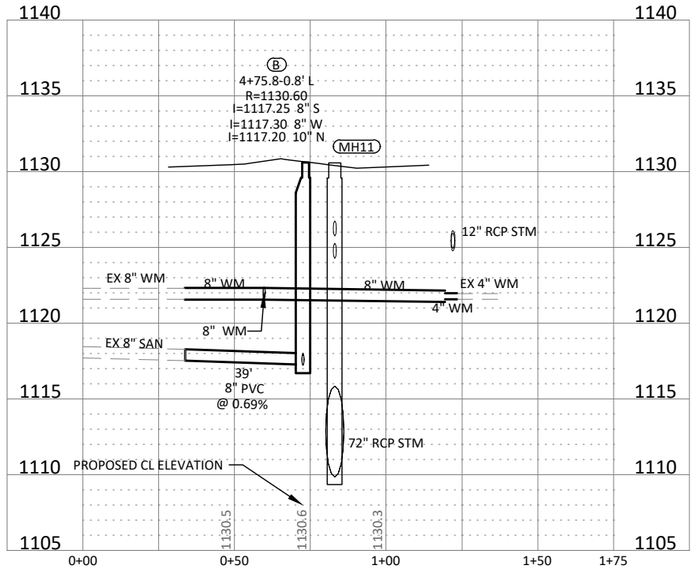
N MILLER AVE



N RAMSEY AVE



3RD ST



HORZ. 0 25 50 SCALE FEET
VERT. 0 5 10 SCALE FEET

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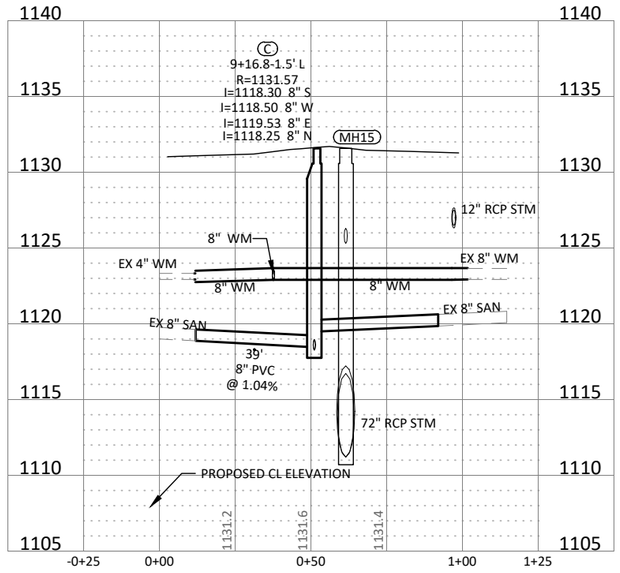
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SANITARY & WATER PLANS - PLAN & PROFILE

SHEET M23 OF M24

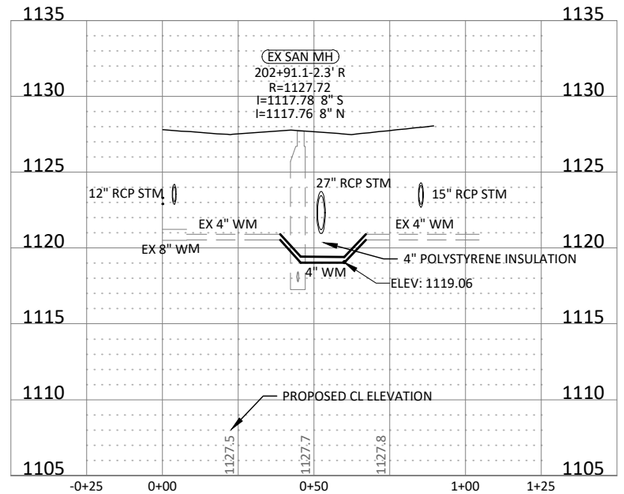
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NOTE:
FIELD VERIFY SANITARY INVERT ELEVATION AT CONNECTIONS (INCIDENTAL).
FIELD VERIFY EXISTING WATERMAIN INVERT ELEVATIONS AT CONNECTIONS (INCIDENTAL).
CONTRACTOR SHALL FIELD VERIFY WATERMAIN OFFSET INVERTS. PROVIDE 18" SEPARATION.

2ND ST



1ST ST E



HORZ. 0 25 50 SCALE FEET
VERT. 0 5 10 SCALE FEET

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

CHUCK DEWOLF, P.E.
LIC. NO. 40931 DATE 12/21/2018

BOLTON & MENK
2040 HIGHWAY 12 EAST
WILLMAR, MINNESOTA 56201
Phone: (320) 231-3956
Email: Willmar@bolton-menk.com
www.bolton-menk.com

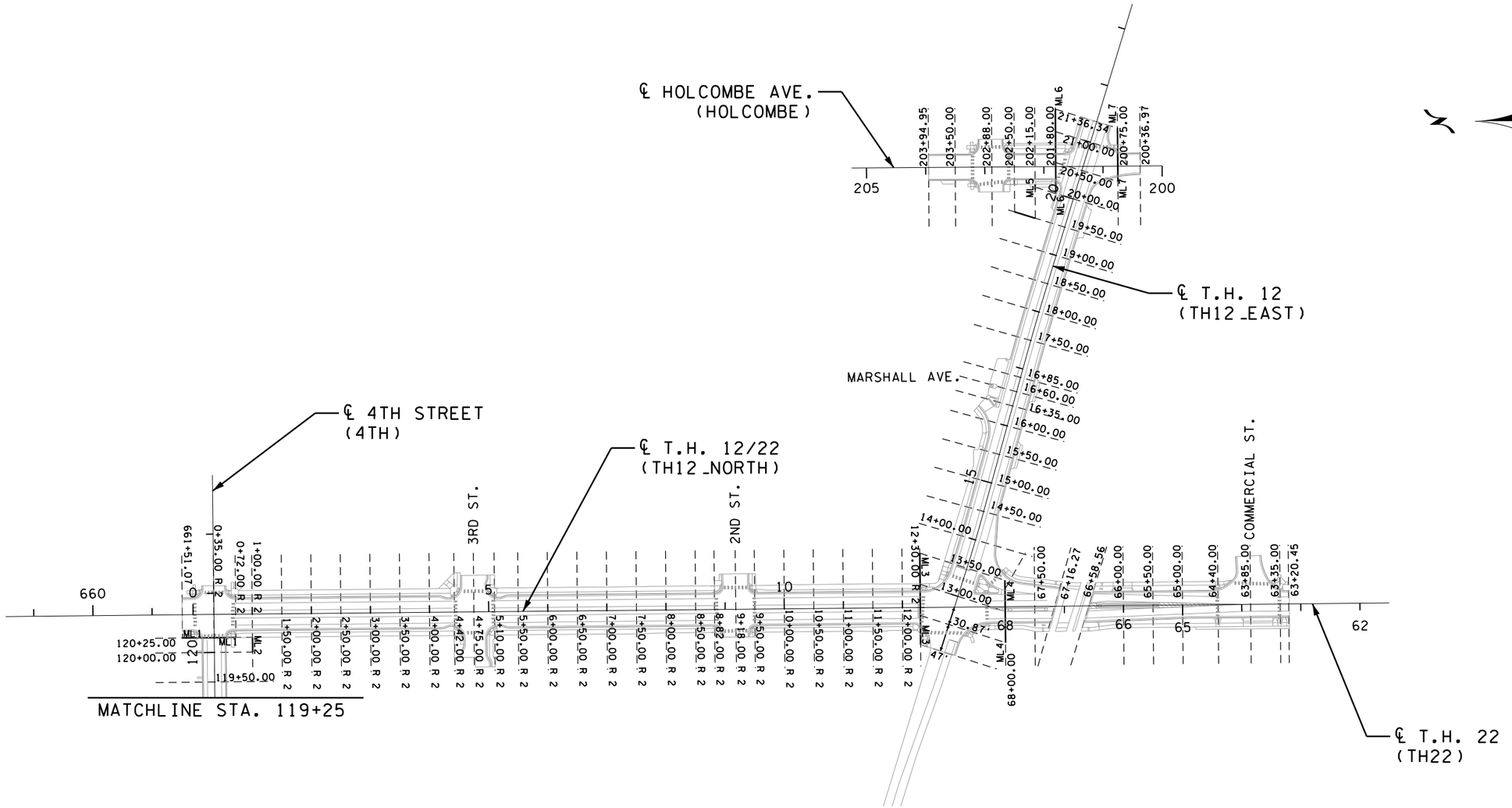
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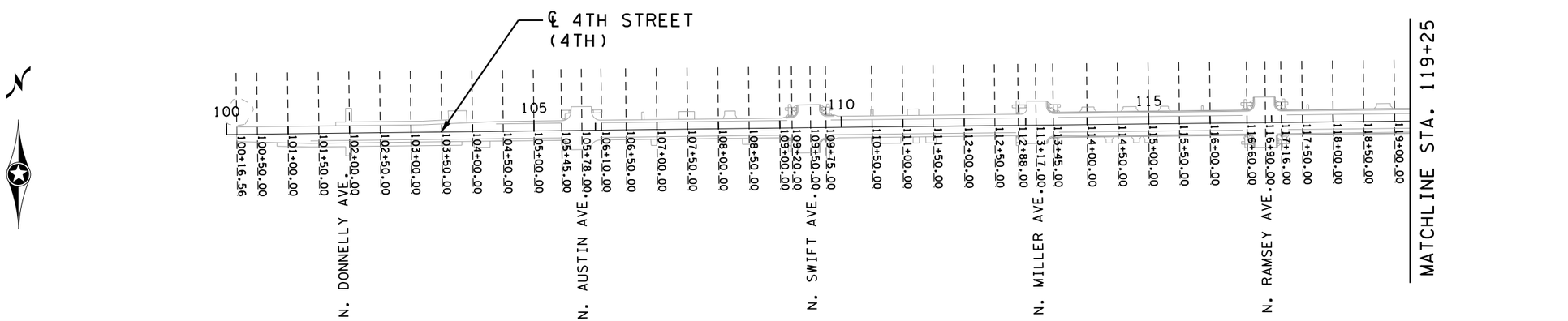
S.P. 4704-89 (T.H.12)
T.H. 12/22 RECONSTRUCTION
SANITARY & WATER PLANS - PLAN & PROFILE

SHEET M24 OF M24

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S.A.P. 135-010-008
S.A.P. 135-010-009
S.A.P. 135-117-005

BOLTON & MENK

12224 NICOLLET AVENUE
BURNSVILLE, MINNESOTA 55337
Phone: (952) 890-0509
Email: Burnsville@bolton-menk.com
www.bolton-menk.com

REV.	BY	DATE

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW H. KROG
LIC. NO. 54689 DATE 07-16-2018

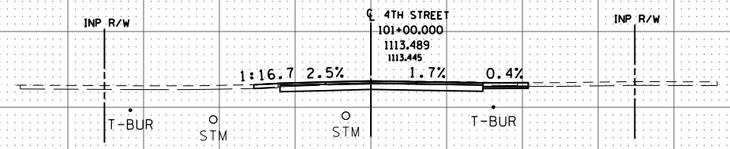
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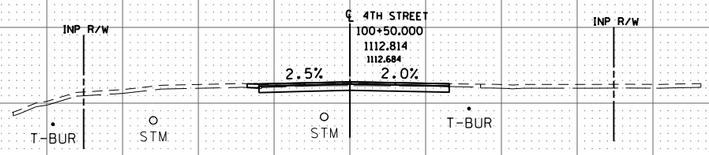
S.P. 4704-89 (T.H. 12)
T.H. 12/22 RECONSTRUCTION
CROSS SECTION MATCHLINE LAYOUT

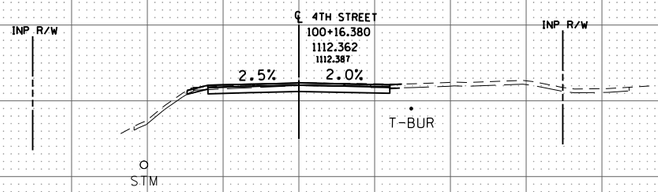
SHEET XS1 OF XS35

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GENERAL NOTES:
- ALL UTILITIES AND DRAINAGE STRUCTURES SHOWN ON THE CROSS SECTIONS ARE INPLACE.
- UTILITY ELEVATIONS AND LOCATIONS ARE APPROXIMATE.
- SOME UTILITIES MAY HAVE BEEN REMOVED OR ABANDONED. SOME NEW UTILITIES MAY HAVE BEEN RECENTLY CONSTRUCTED AND MAY NOT BE SHOWN



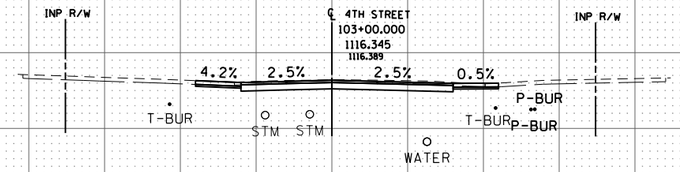


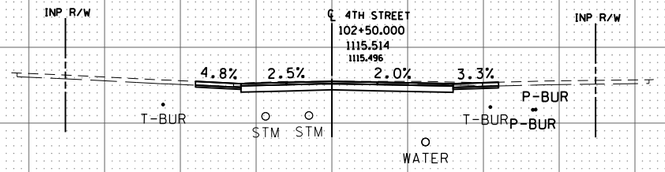


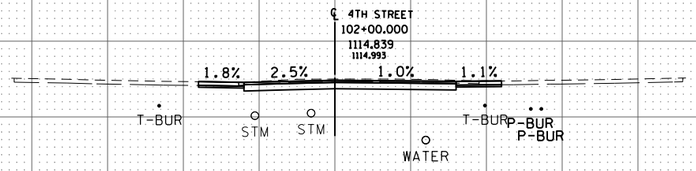
STA. 100+16.380 - 101+00.000

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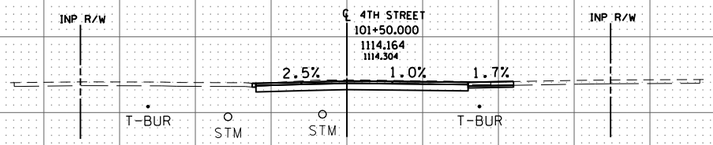
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DONNELLY AVE

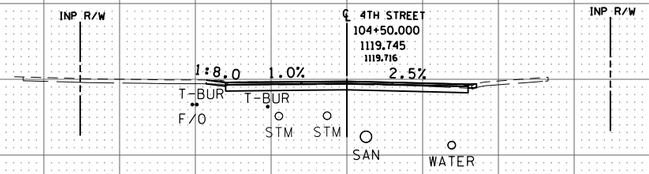


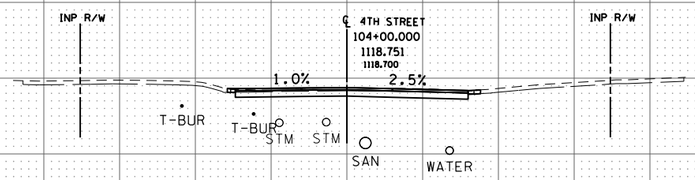
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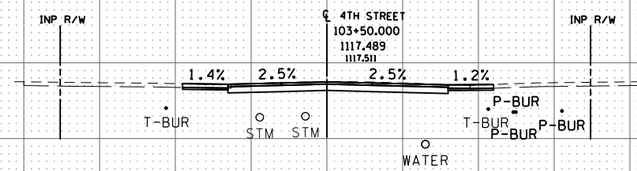
STA. 101+50.000 - 103+00.000

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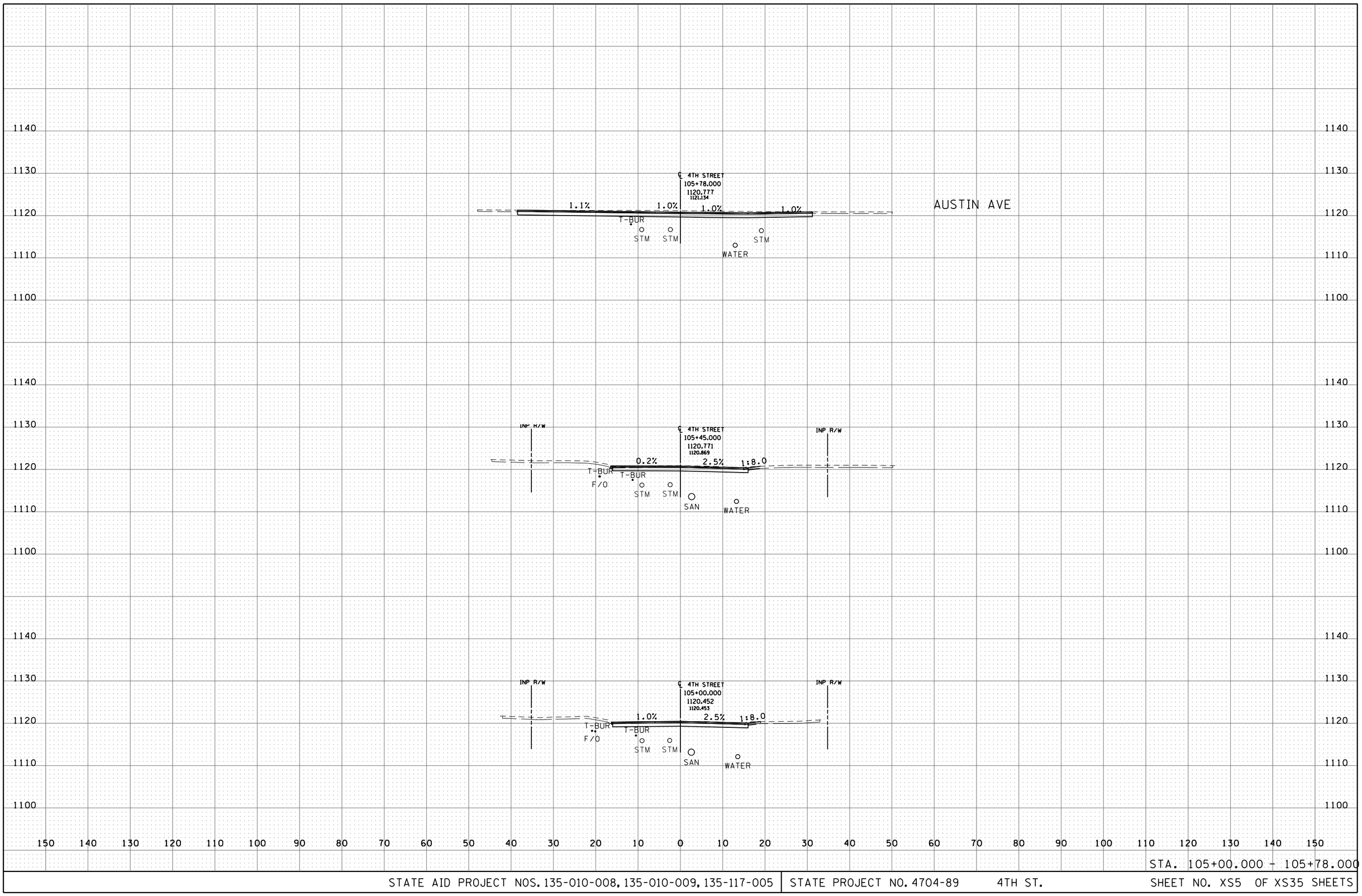




STA. 103+50.000 - 104+50.000

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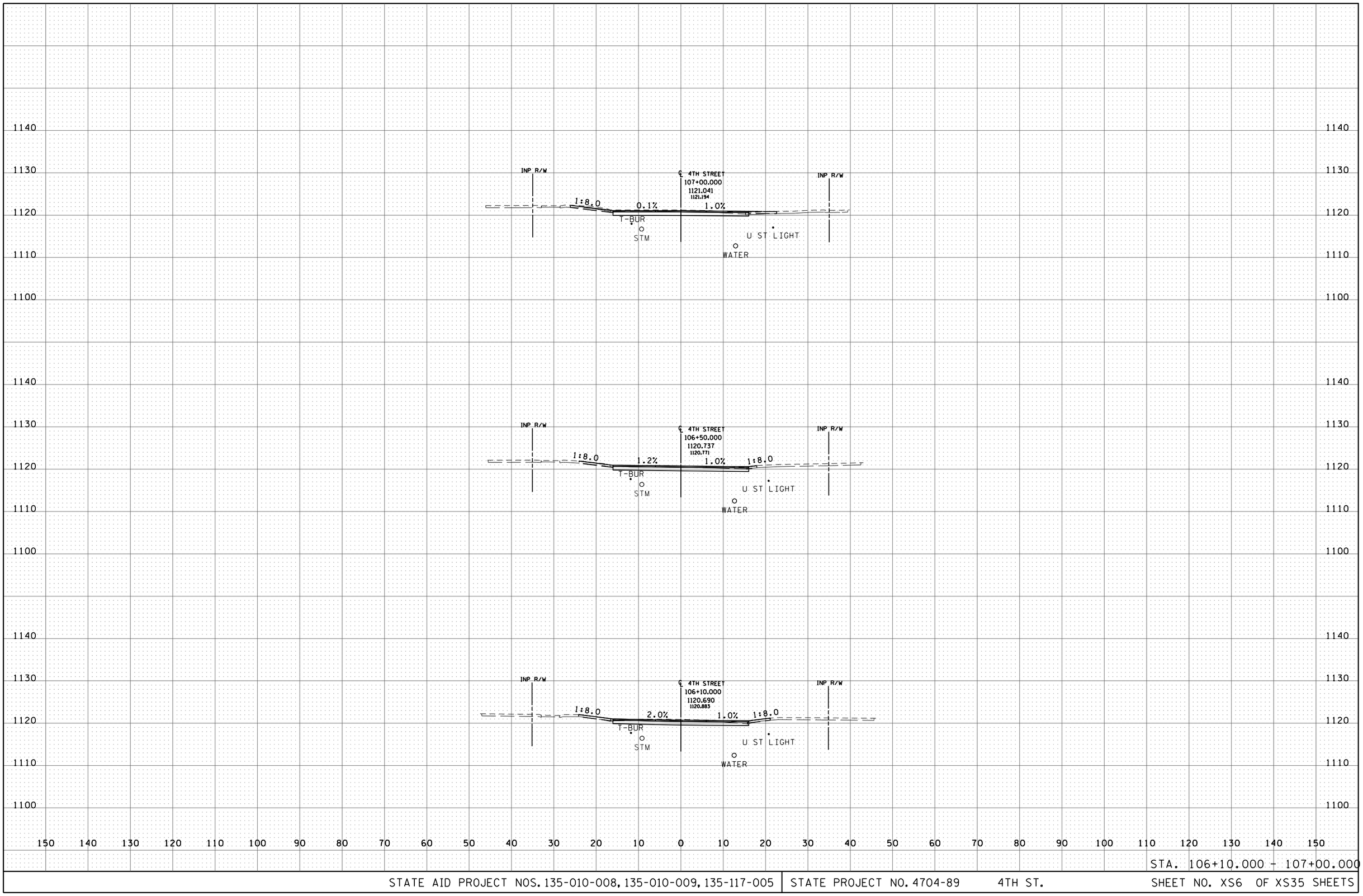
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STA. 105+00.000 - 105+78.000

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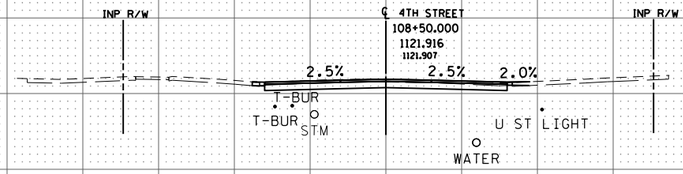
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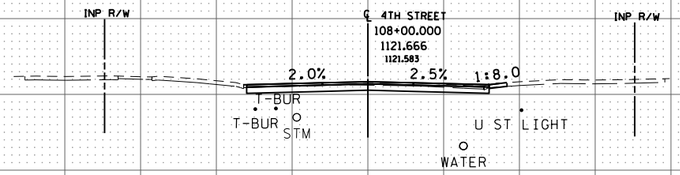


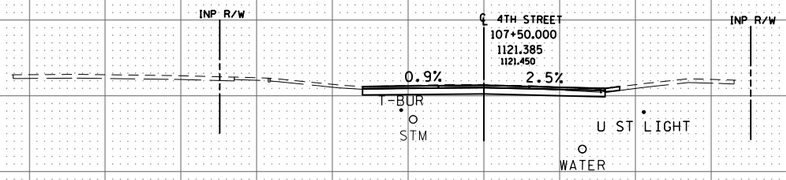
STA. 106+10.000 - 107+00.000

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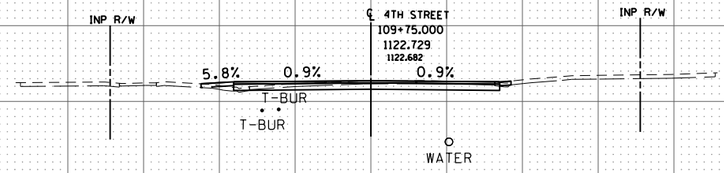


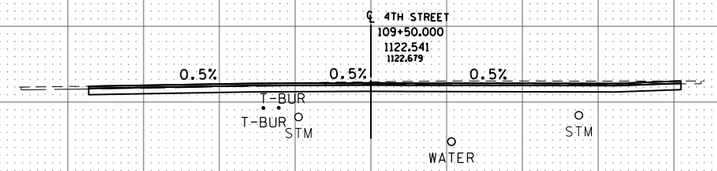


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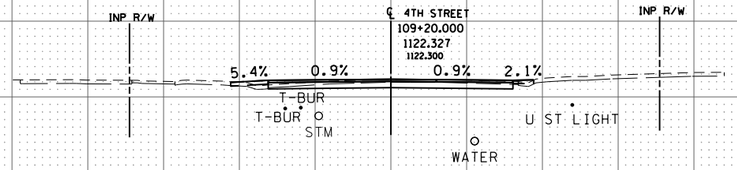
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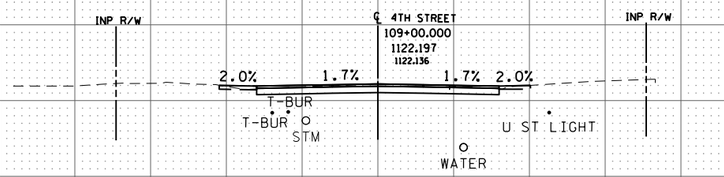
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SWIFT AVE





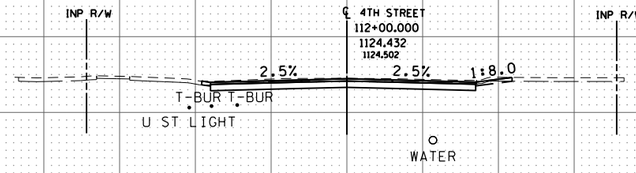
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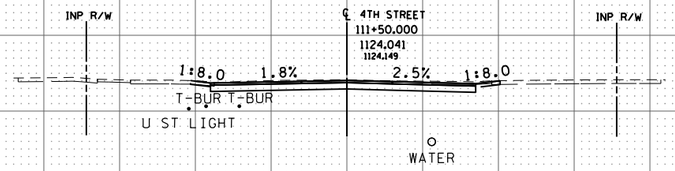
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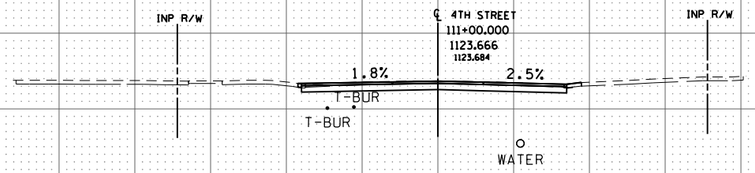
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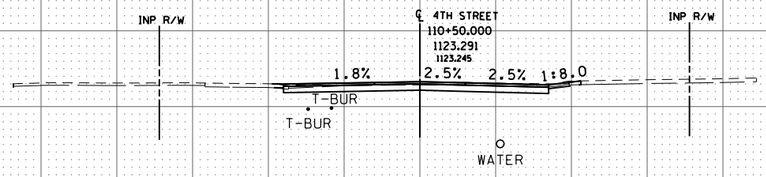
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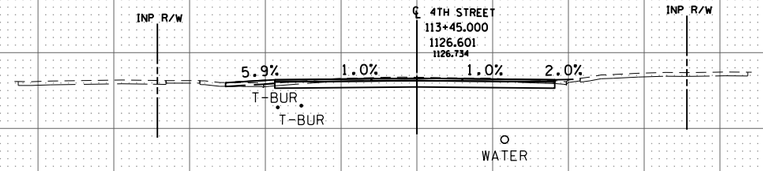


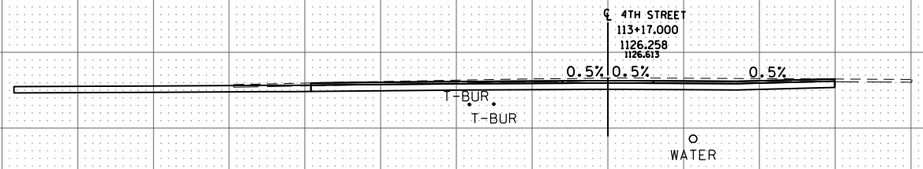




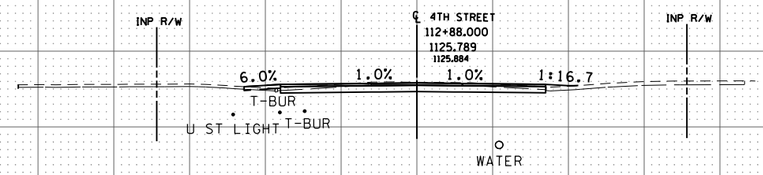


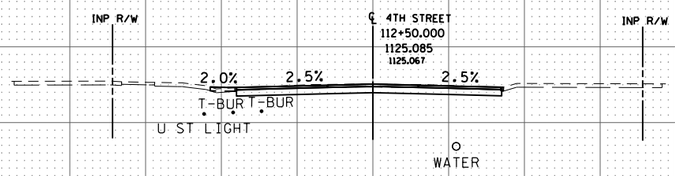
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MILLER AVE



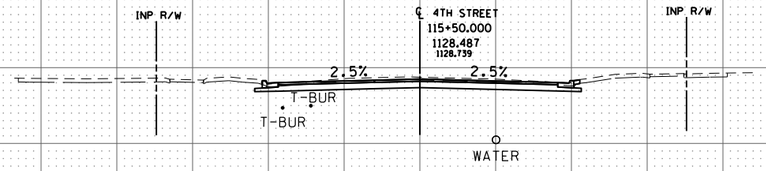


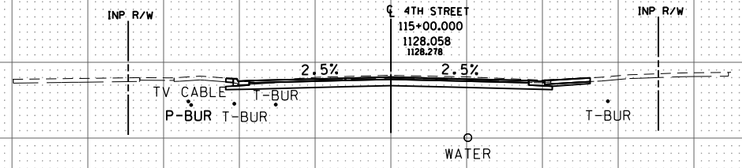
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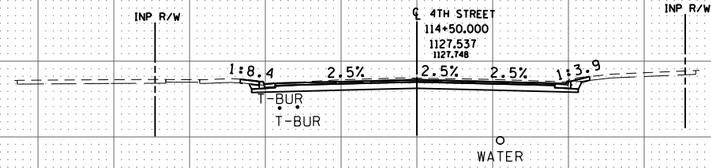
STA. 112+50.000 - 113+45.000

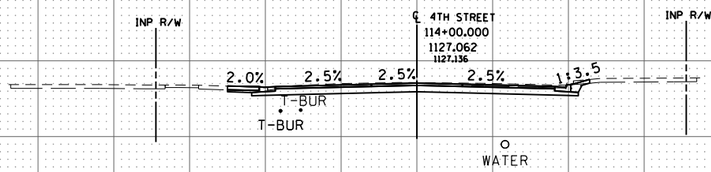
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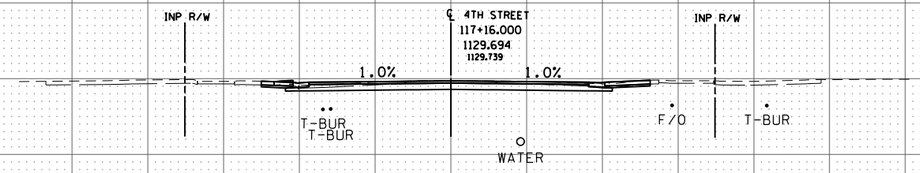


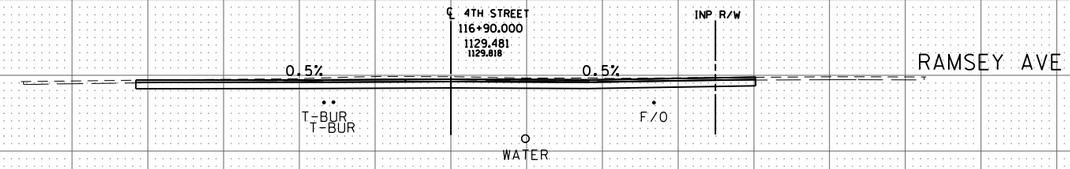
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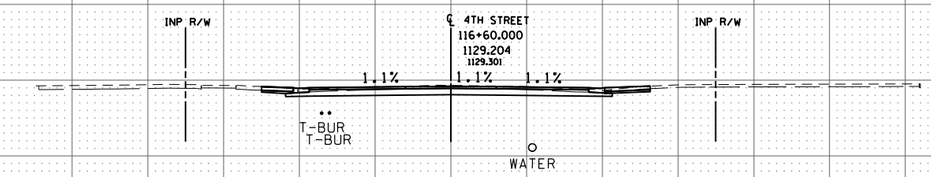
STA. 114+00.000 - 115+50.000

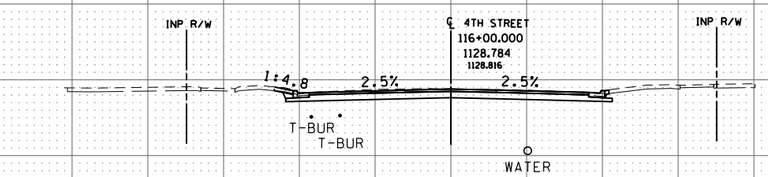
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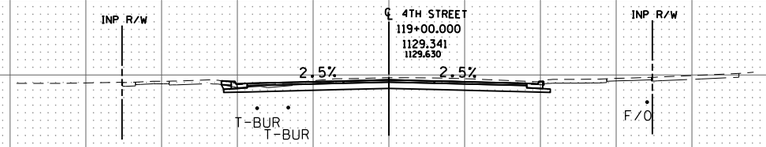
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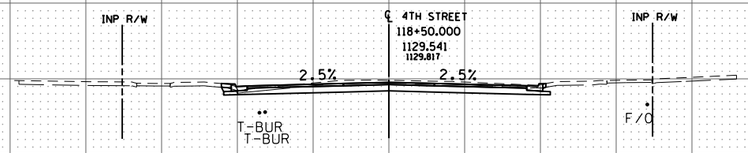
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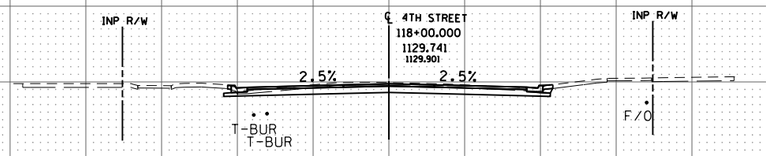
STA. 116+00.000 - 117+16.000

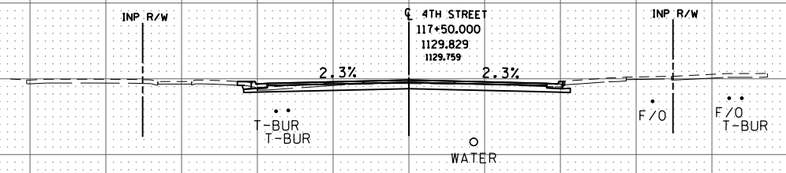
STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 4TH ST. | SHEET NO. XS12 OF XS35 SHEETS

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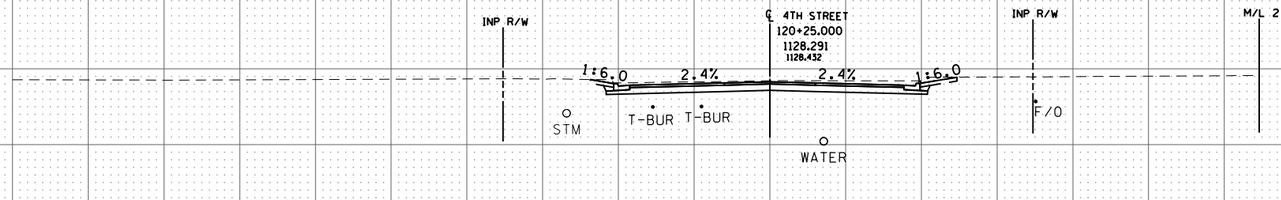
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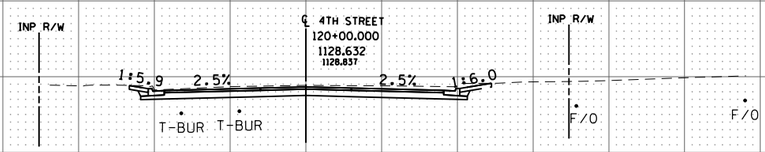
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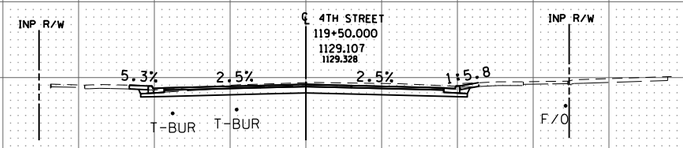
STA. 117+50.000 - 119+00.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 4TH ST. | SHEET NO. XS13 OF XS35 SHEETS

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2/8/2019







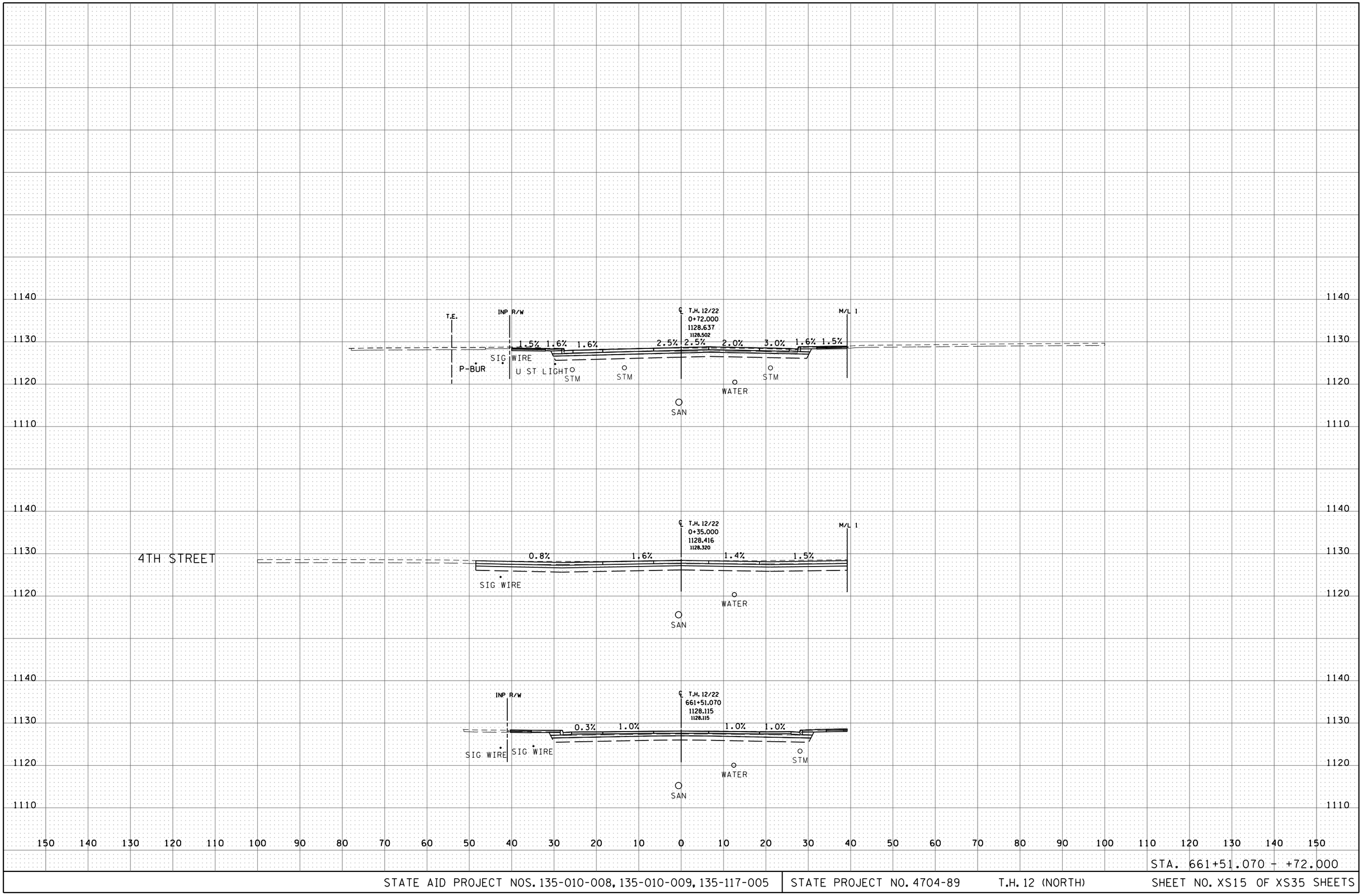
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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STA. 119+50.000 - 120+25.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 4TH ST. | SHEET NO. XS14 OF XS35 SHEETS

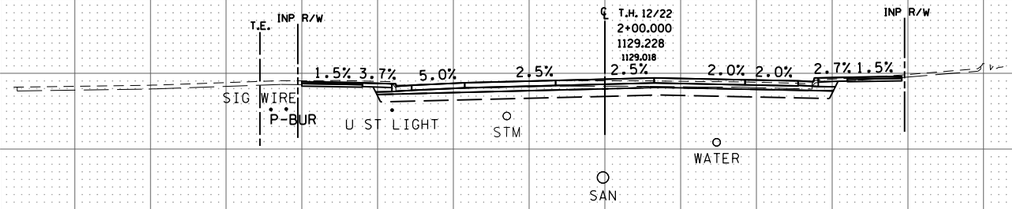
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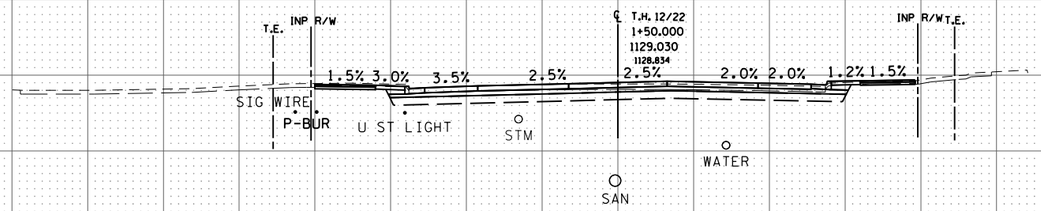


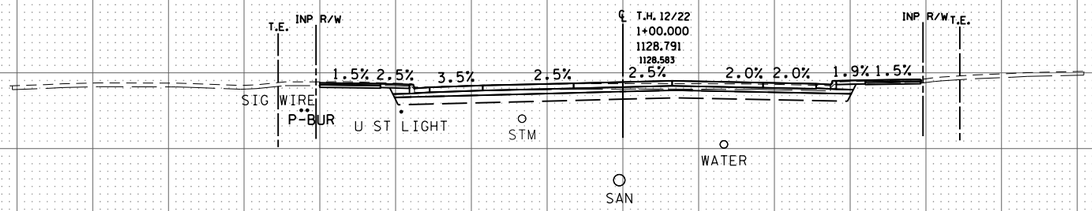
STA. 661+51.070 - +72.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (NORTH) | SHEET NO. XS15 OF XS35 SHEETS

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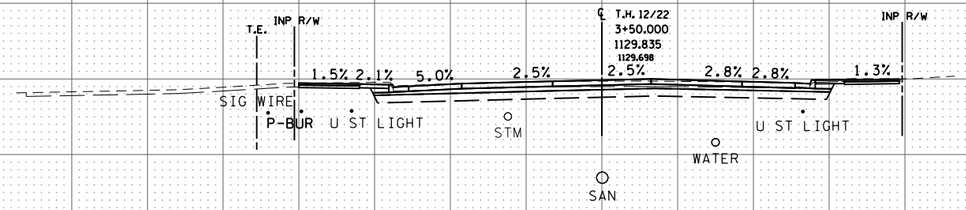
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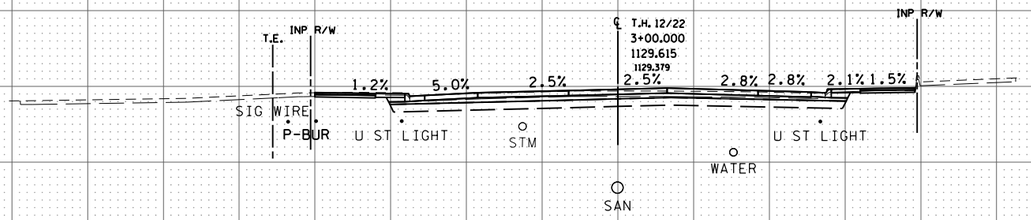
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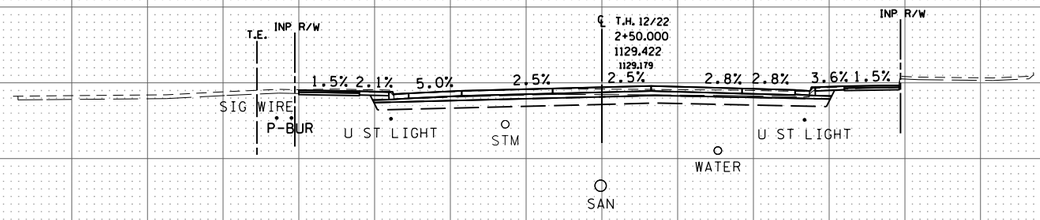
STA. 1+00.000 - 2+00.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (NORTH) | SHEET NO. XS16 OF XS35 SHEETS

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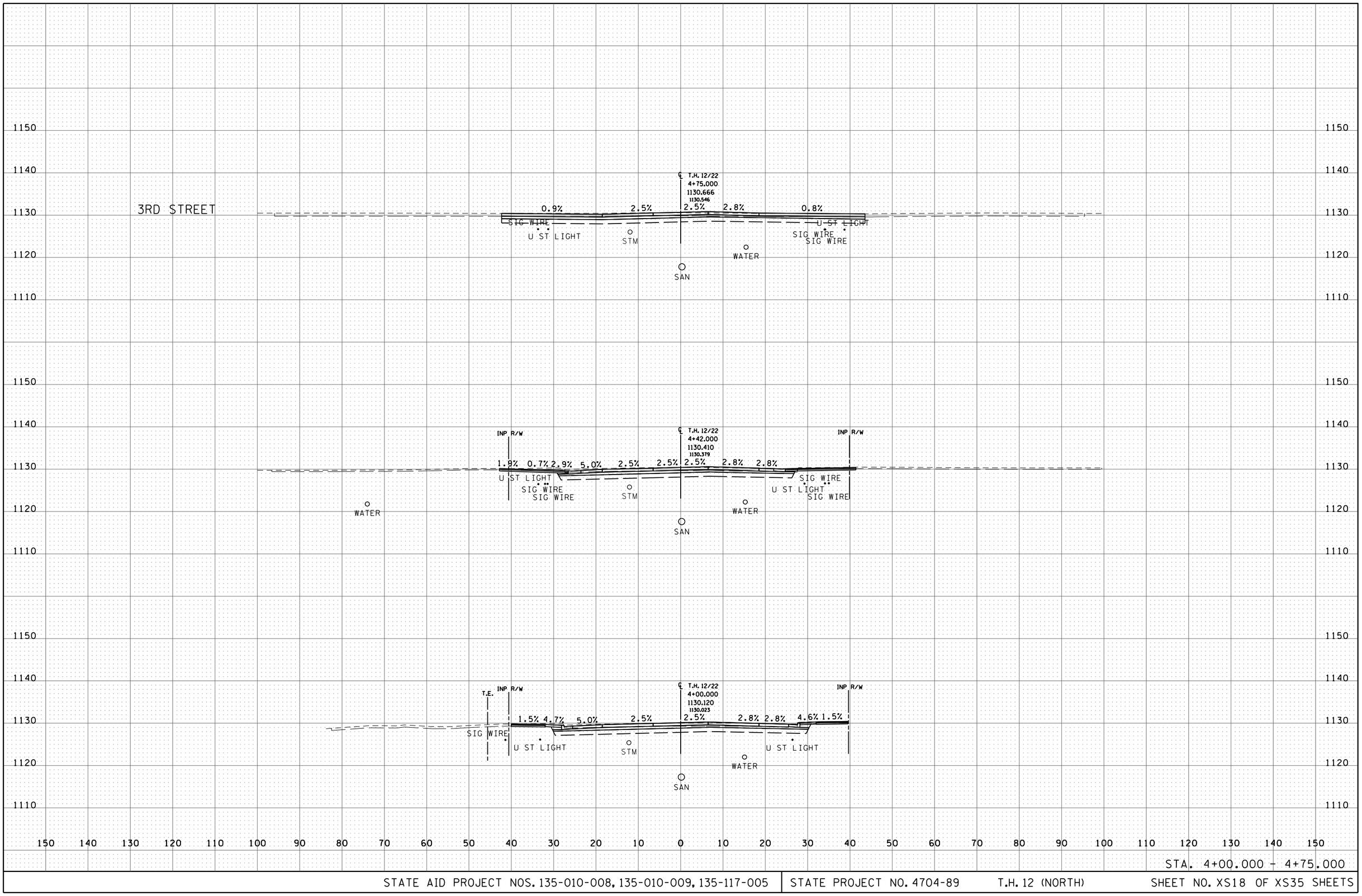
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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STA. 2+50.000 - 3+50.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (NORTH) | SHEET NO. XS17 OF XS35 SHEETS

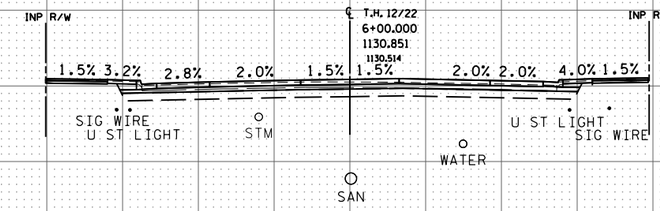
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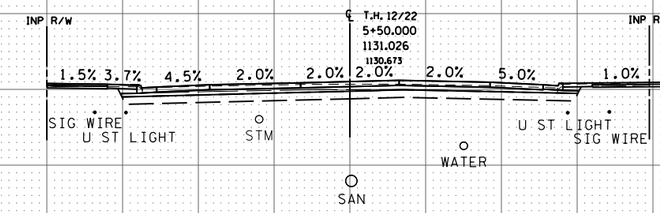


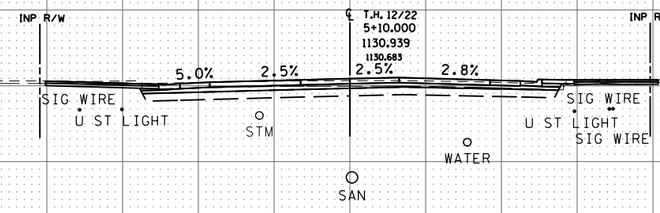
STA. 4+00.000 - 4+75.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005	STATE PROJECT NO. 4704-89 T.H. 12 (NORTH)	SHEET NO. XS18 OF XS35 SHEETS

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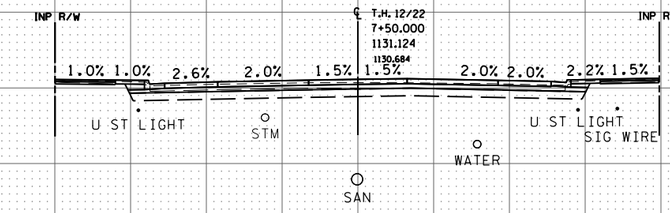


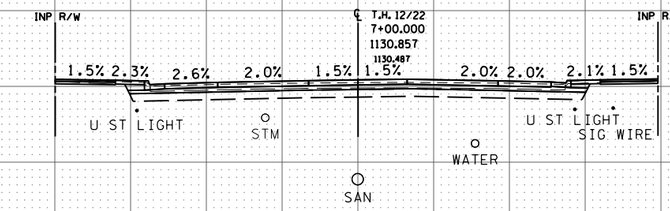
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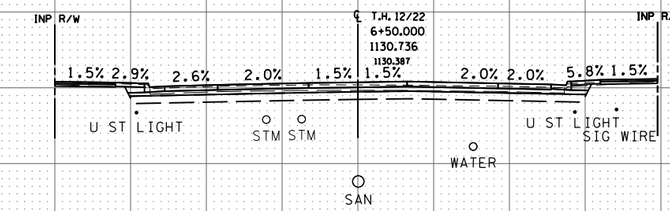
STA. 5+10.000 - 6+00.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (NORTH) | SHEET NO. XS19 OF XS35 SHEETS

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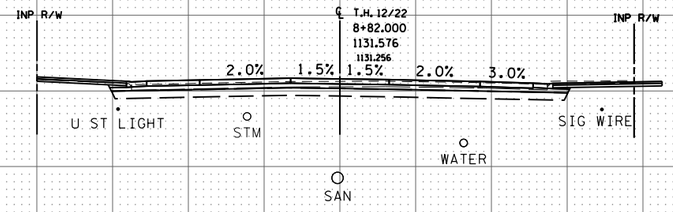


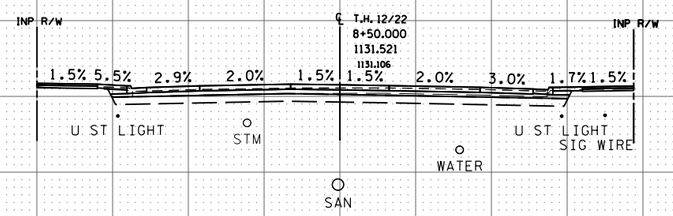


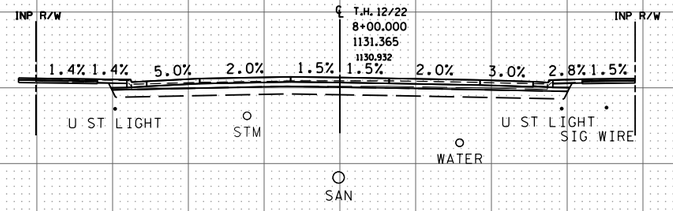
STA. 6+50.000 - 7+50.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (NORTH) | SHEET NO. XS20 OF XS35 SHEETS

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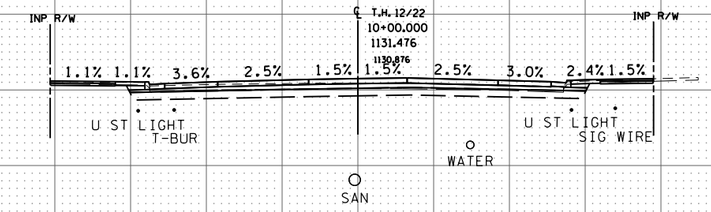


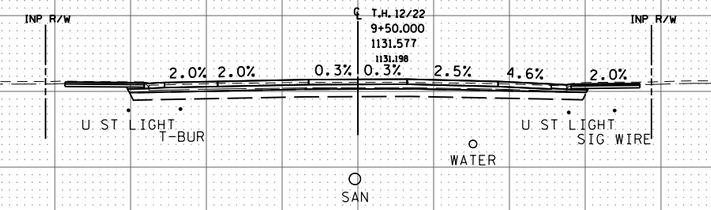


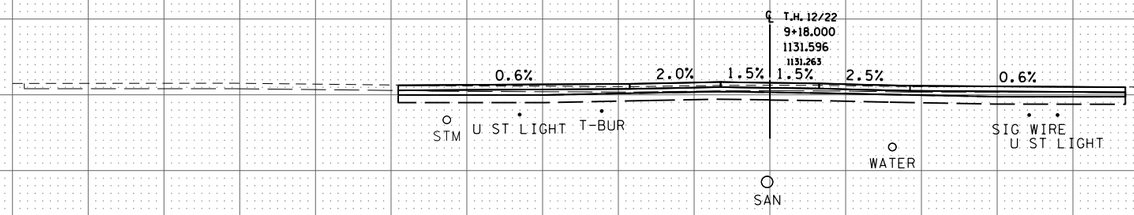


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STA. 8+00.000 - 8+82.000

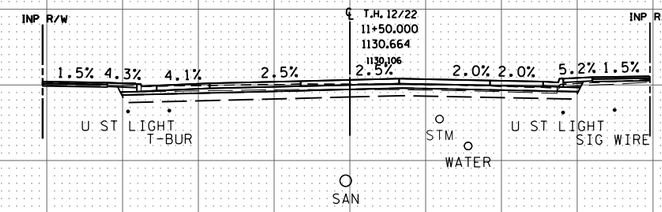


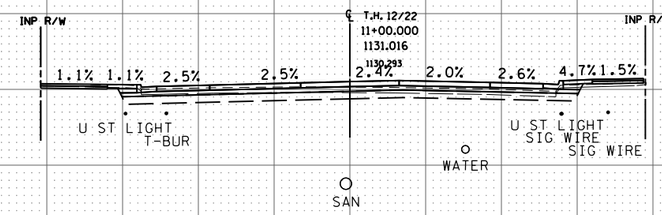


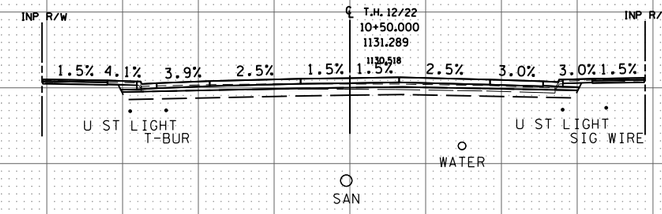


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STA. 9+18.000 - 10+00.000





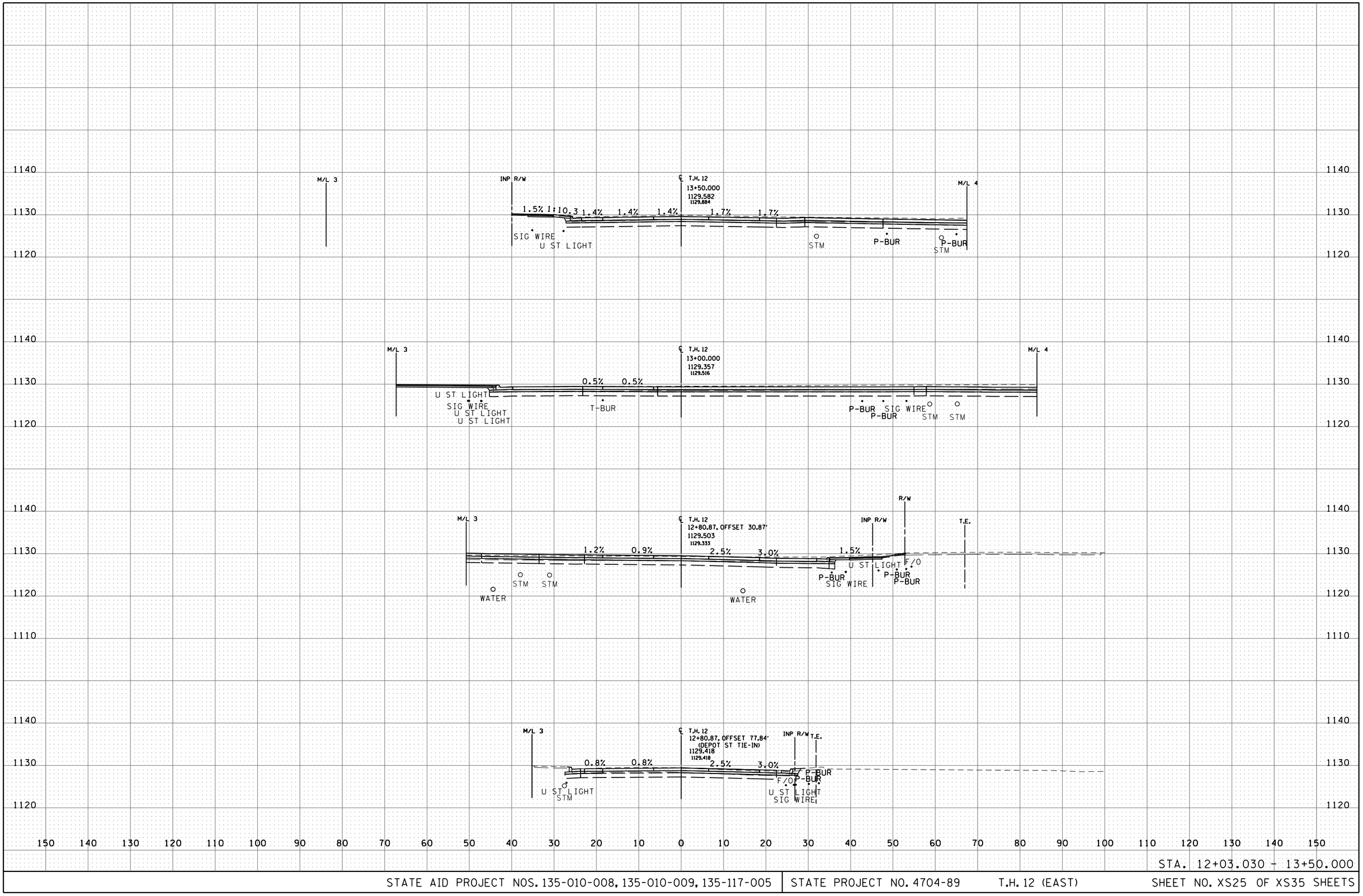


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STA. 10+50.000 - 11+50.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (NORTH) | SHEET NO. XS23 OF XS35 SHEETS

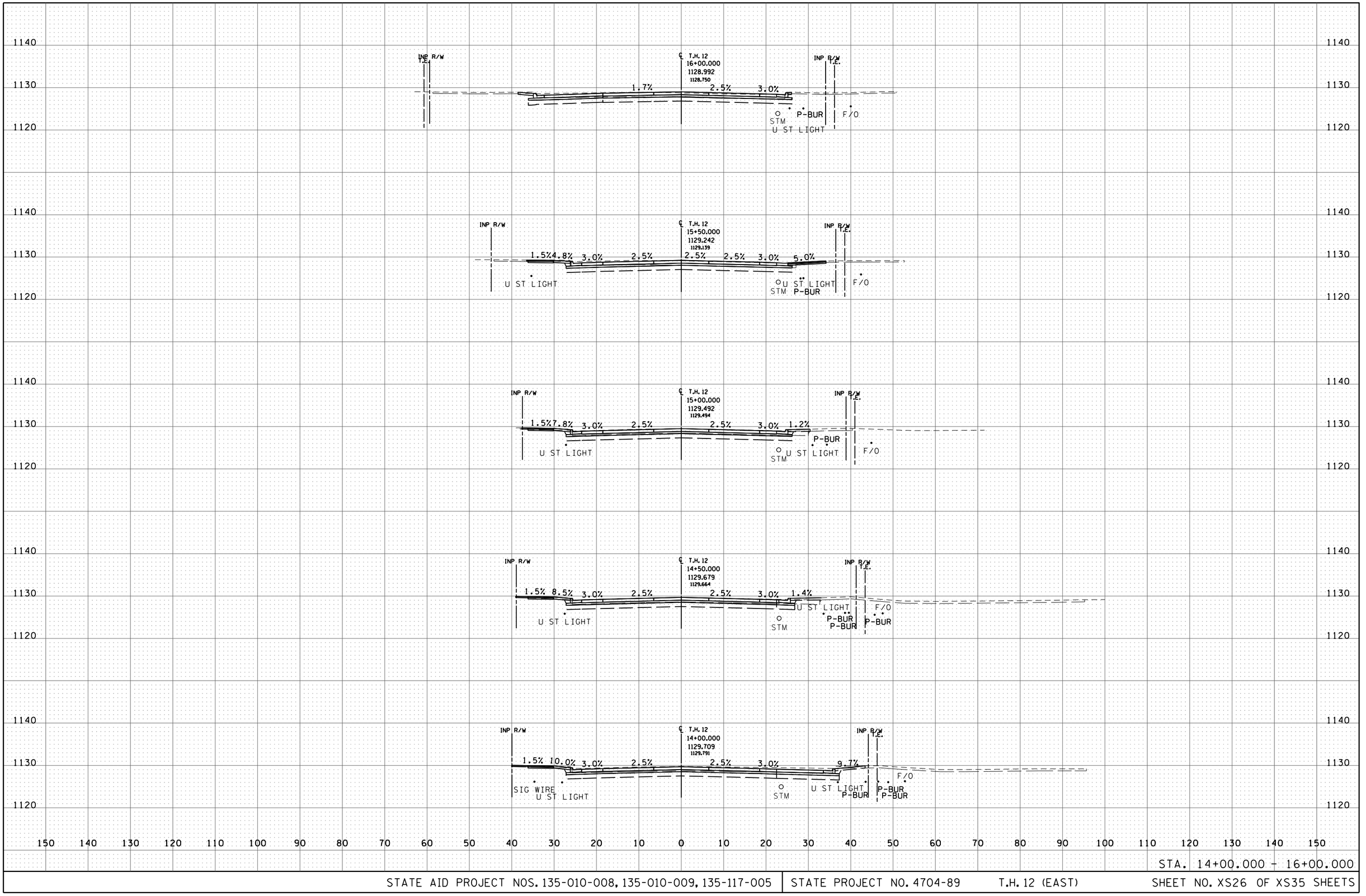
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STA. 12+03.030 - 13+50.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (EAST) | SHEET NO. XS25 OF XS35 SHEETS

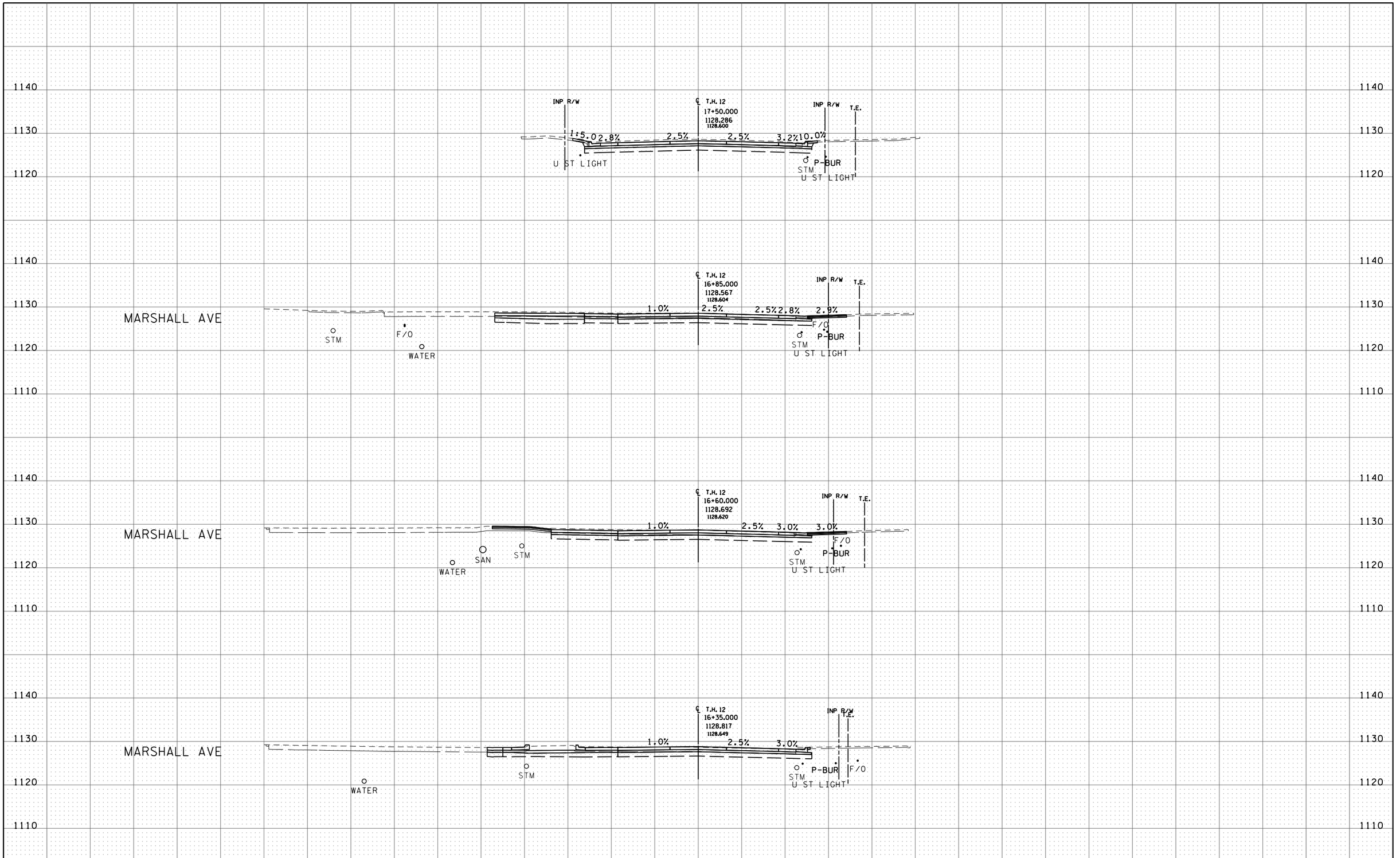
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STA. 14+00.000 - 16+00.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (EAST) | SHEET NO. XS26 OF XS35 SHEETS

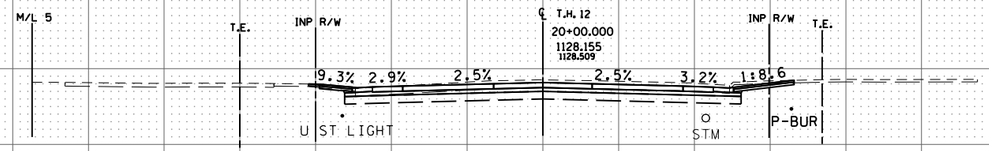
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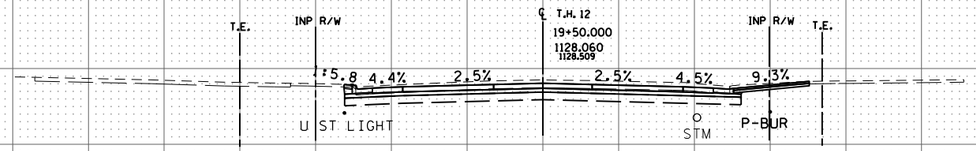


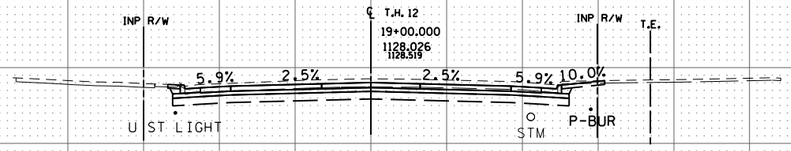
STA. 16+35.000 - 17+50.000

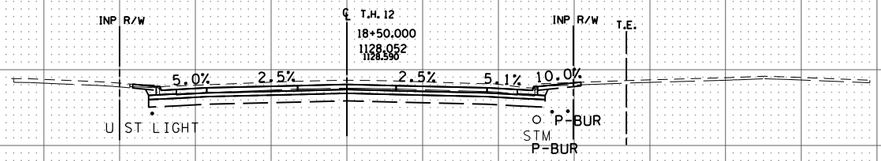
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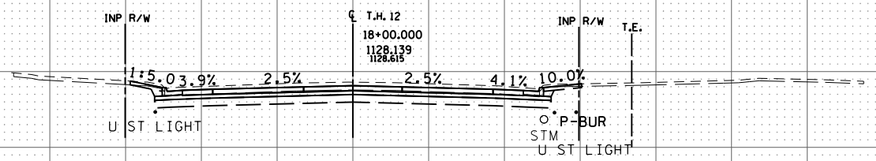
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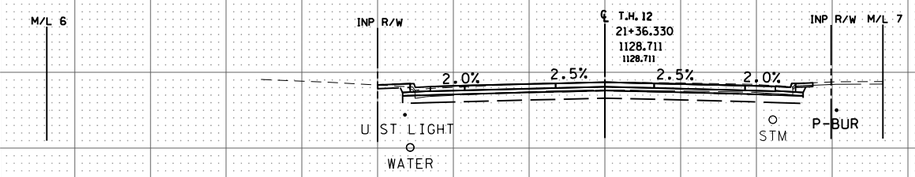


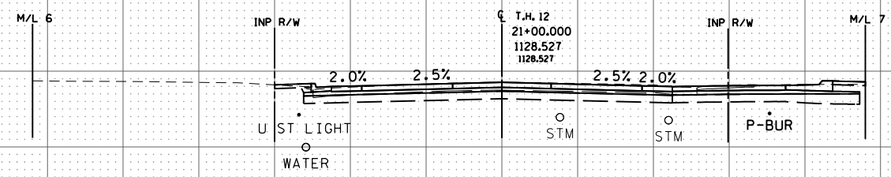
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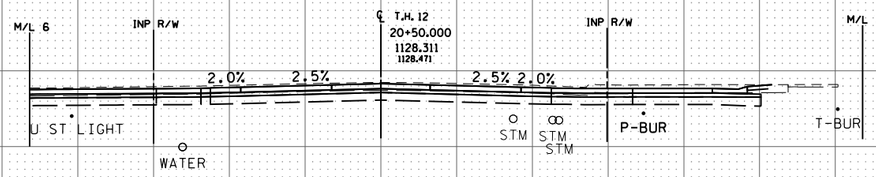
STA. 18+00.000 - 20+00.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (EAST) | SHEET NO. XS28 OF XS35 SHEETS

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HOLCOMBE AVE

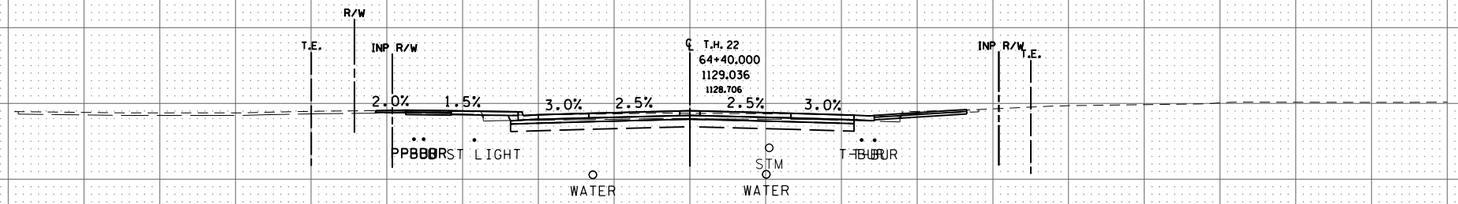
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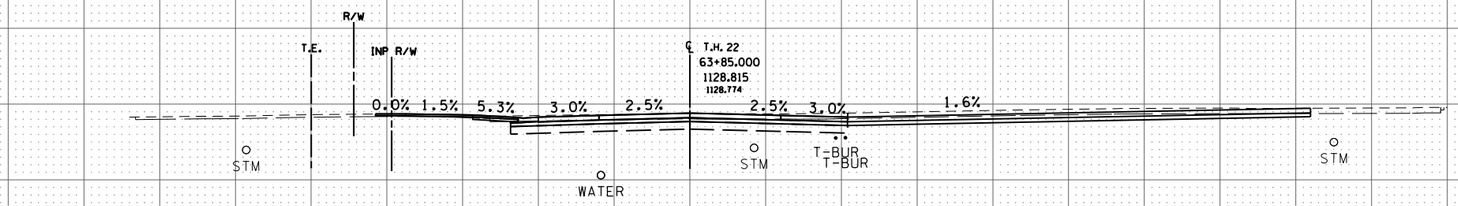
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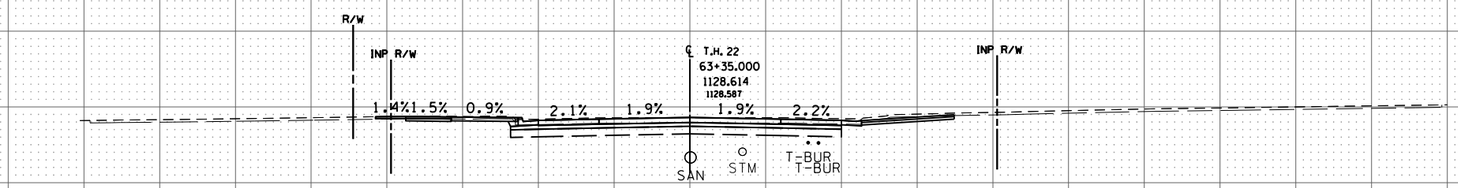
STA. 20+50.000 - 21+36.340

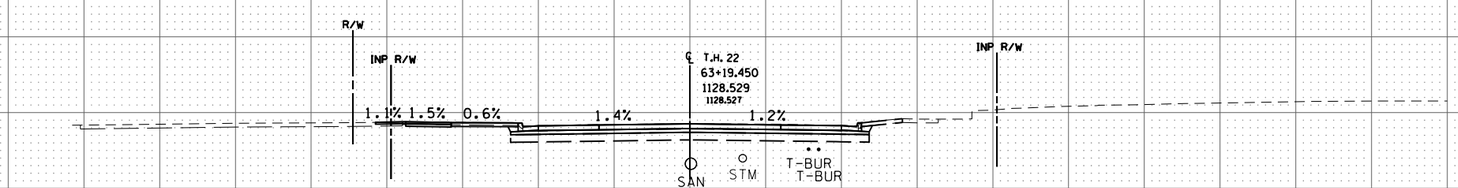
STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 12 (EAST) | SHEET NO. XS29 OF XS35 SHEETS

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E. COMMERCIAL ST.

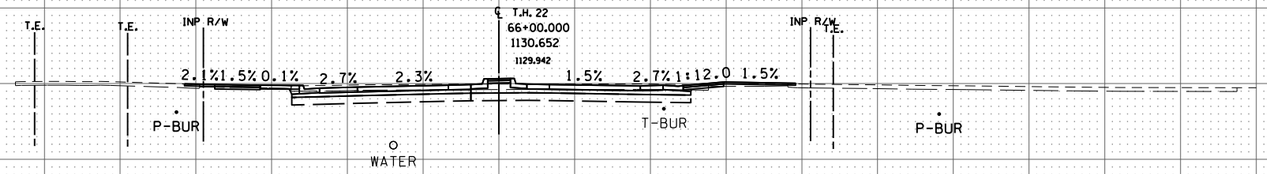
1140
1130
1120
1110

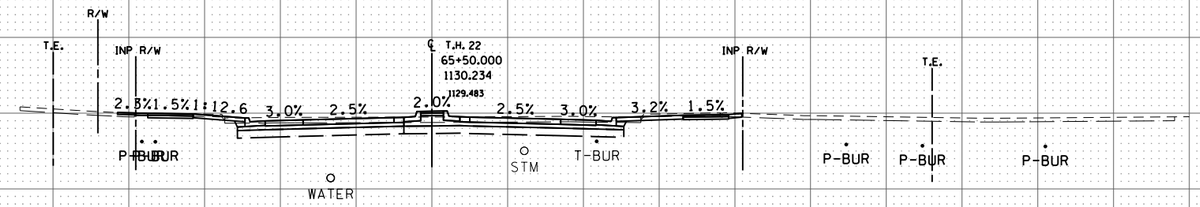
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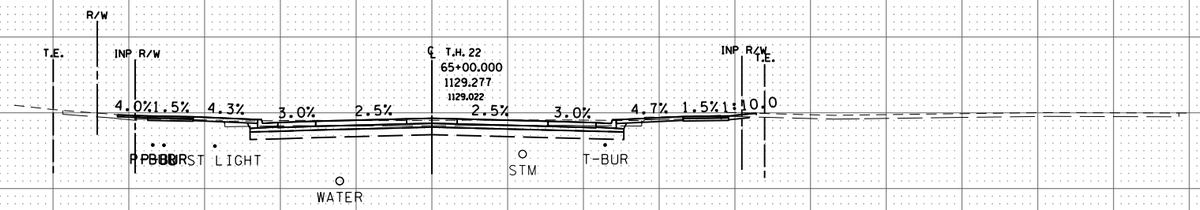
STA. 63+19.450 - 64+40.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 22 | SHEET NO. XS30 OF XS35 SHEETS

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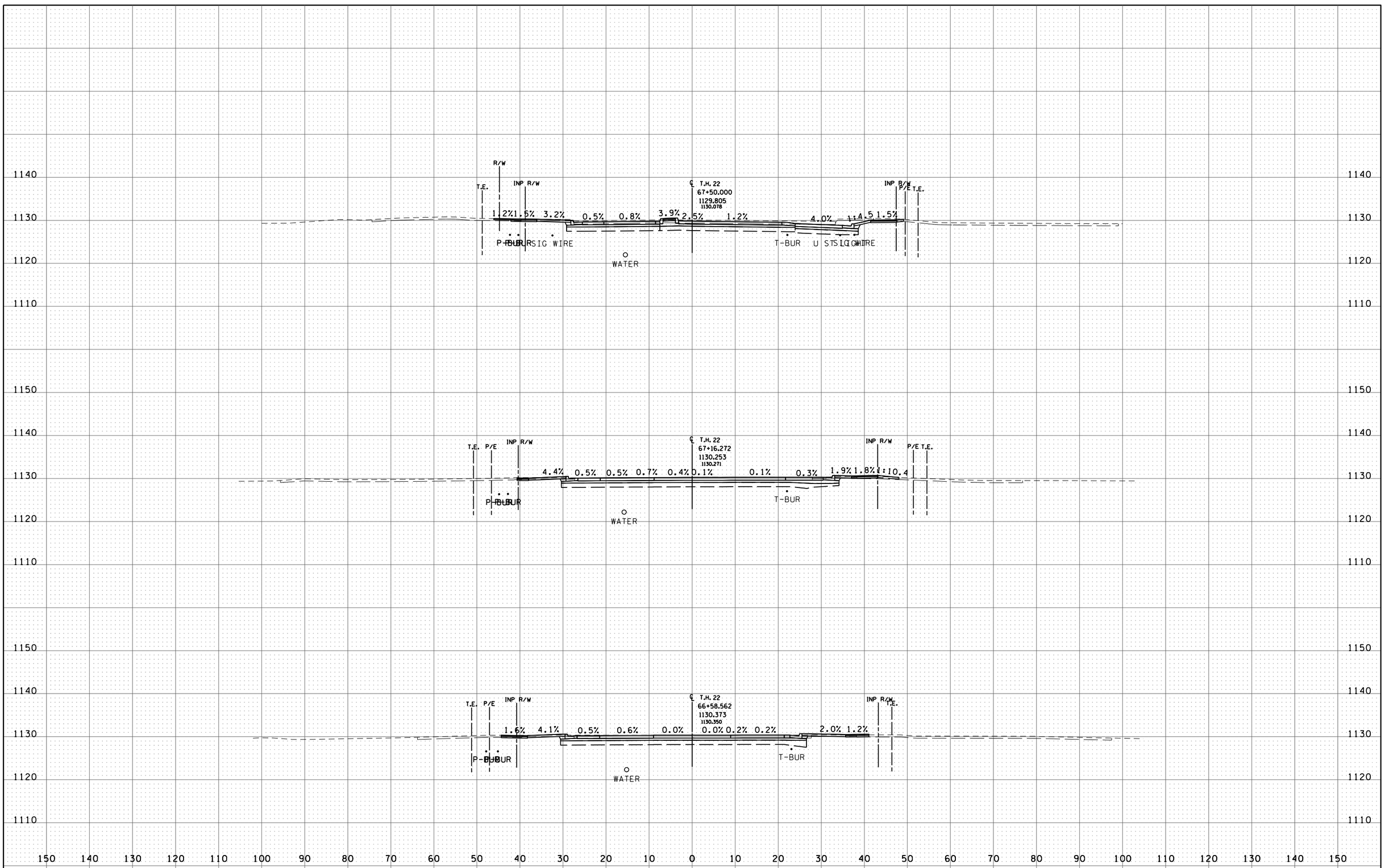
1150 1140 1130 1120 1110

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STA. 65+00.000 - 66+00.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 22 | SHEET NO. XS31 OF XS35 SHEETS

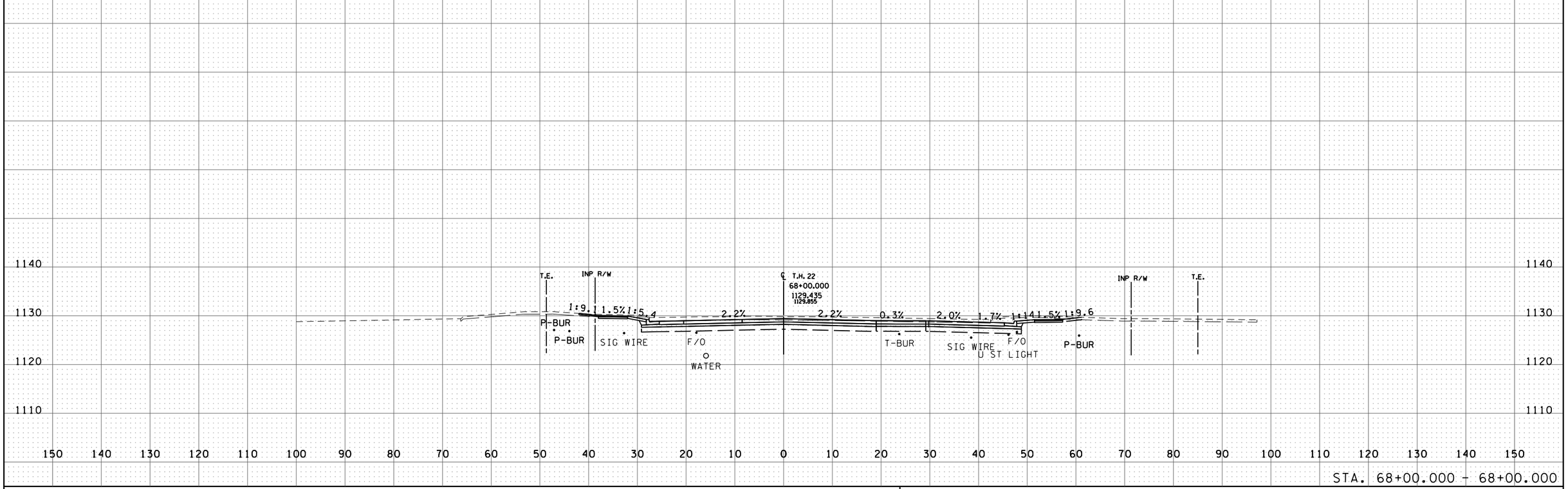
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STA. 66+58.560 - 67+50.000

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 22 | SHEET NO. XS32 OF XS35 SHEETS

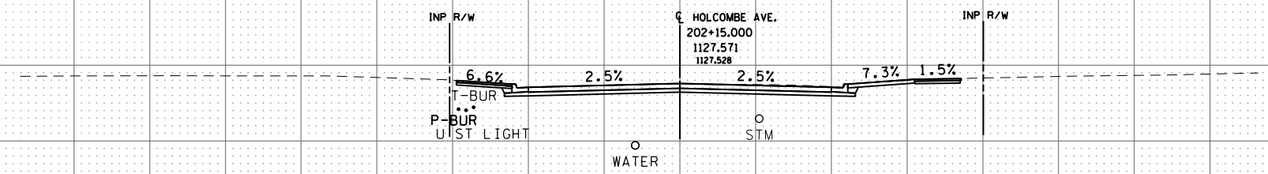
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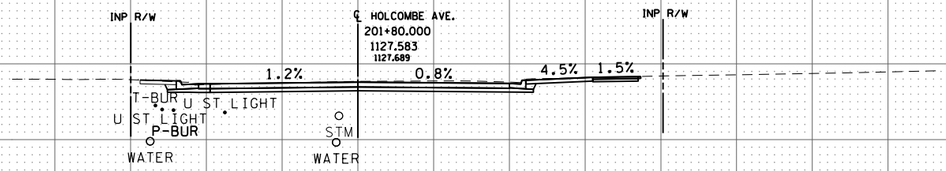


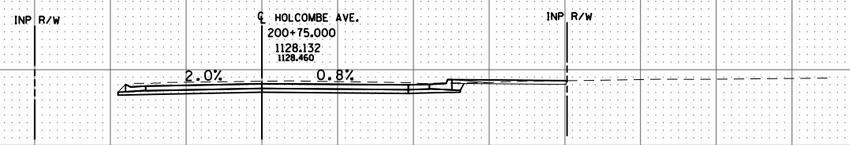
STA. 68+00.000 - 68+00.000

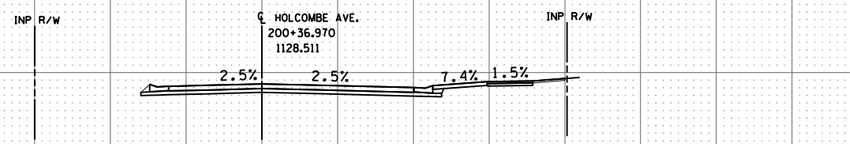
STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 T.H. 22 | SHEET NO. XS33 OF XS35 SHEETS

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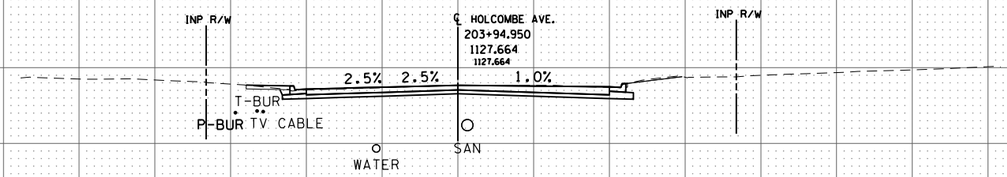


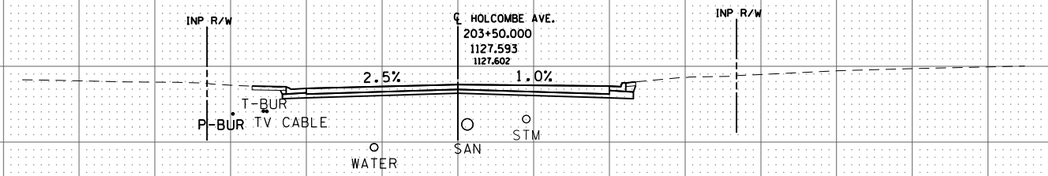


STA. 200+36.97 - 202+15.00

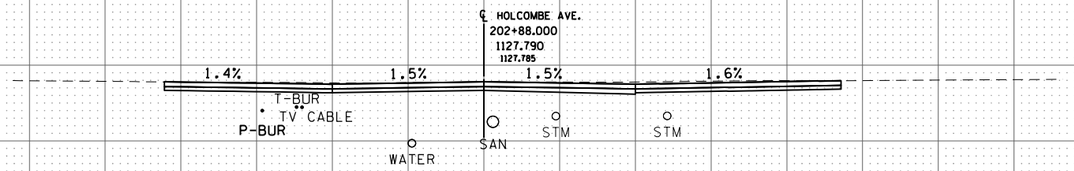
STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 HOLCOMBE AVE. | SHEET NO. XS34 OF XS35 SHEETS

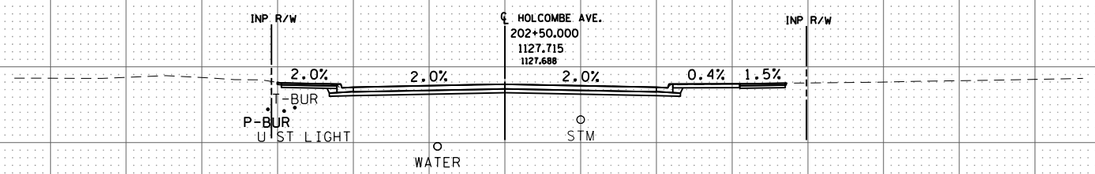
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1ST STREET





STA. 202+50.00 - 203+94.95

STATE AID PROJECT NOS. 135-010-008, 135-010-009, 135-117-005 | STATE PROJECT NO. 4704-89 HOLCOMBE AVE. | SHEET NO. XS35 OF XS35 SHEETS

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